Towards a model for creative climates in higher education organisations:

A constructivist grounded theory case study of Irish academics' experiences of creativity and innovation in curriculum development

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Dedication

To my daughter, Elizabeth.

Abstract

At a time of complex change in the provision of higher education by Institutes of Technology (IOTs) in Ireland, this qualitative study provides significant insights into the factors which have impact on academic creativity and innovation inside higher education institutions (HEIs). Curriculum development processes were examined in four Irish IOTs and one university, employing a constructivist grounded theory case study methodology. Interviews were conducted to gather experiences of 20 Irish academics. Five rounds of data analysis were processed with QSR NVivo software.

A creativity paradox was uncovered: contemporary Higher Education (HE) policies promote cultures of creativity and innovation, yet, in practice, academics feel restricted in New Programme Development and Validation (NPDV) by greater regulatory compliance and sector rationalisation. However, despite increasingly complex HE controls, study findings show the significant impact of leadership within the HEI, and that a climate for academic creativity and innovation can exist, if the organisational climate conditions of effective leadership; trust; transparency; managerial and innovation process support are in place. Where present, these conditions have a positive impact on progress in the development of creative new programmes of learning and on the wider climate for creativity and innovation in the IOT. The in-depth interrogation of curriculum development and validation processes in Irish HEIs is the first of two primary contributions to knowledge of this research.

Though state level regulatory compliance legacies represent a significant bureaucratic load on the IOTs, the impetus for HEI regulatory policies in Ireland increasingly originates from European Union (EU) HE agendas. Within the literature, there are criticisms of an EU creativity and innovation agenda for HE which is not sufficiently broad based and is heavily focused on servicing industry interests (Duff, 2011; MacLaren, 2012; Moutsios, 2013). Benefits of this creativity agenda are acknowledged, but a counterbalanced, more holistic approach to creativity development in HE, represented by the Humboldtian higher education ideal is advocated.

A synthesis of findings led to the development of the *three-level model for organisational creativity and innovation in higher education,* the second primary contribution to knowledge of this research. The model illustrates the HEI climate factors, experienced by academics to have impact on creativity and innovation in Irish HEIs. Factors emerged at three levels: individual/team; organisational and meta-organisational. The findings of this study were found to align at individual/team and organisational levels, with Amabile's (1988) componential model for organisational creativity and innovation.

The development of this three-level model is timely, given the change impetus in the IOT sector towards the development of technological universities in Ireland, in addition to the financial, technological and global competitiveness challenges currently facing the institutes. The model will serve as a comprehensive tool, informing HEI senior management and policy developers of the factors which must be addressed, to develop an authentic HE climate conducive to creativity and innovation. To this end, HEI policymakers are encouraged to *think creativity first* when considering implementation of new HE regulatory policies and practices. The findings in this study will contribute to the ongoing policy discourse about the future of the IOTs during a period of significant change in the sector.

Keywords: IOT sector change; HEIs in Ireland; three-level model for organisational creativity and innovation in higher education; leadership in higher education; trust in higher education; creativity and innovation; higher education policy; curriculum development; new programme development; Irish higher education; Institutes of technology culture; IOT; organisational creativity; creative climate study; Innovation in higher education; Irish HEI.

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Glossary of Terms and Abbreviations

AC	Academic Council
BP	The Bologna Process
C&I	Creativity and Innovation
CAO	Central Applications Office (process exam results for entry to Irish HEIs)
CCQ	Creative Climate Questionnaire (developed by Goran Ekvall)
CEDAG	European Council for Non-Profit Organisations
CGT	Constructivist Grounded Theory
DES	The Irish Government Department of Enterprise and Skills
EB	Executive Board
EC	European Commission
ECF	Employment Control Framework (Irish policy response to recession, cutting public sector resources)
EFQ	European Framework of Qualifications
EHEA	European Higher Education Authority
ENQA	European Association for Quality Assurance in Higher Education
EQAR	The European Quality Assurance Register (EQAR)
ESU	The European Students Union
EU	European Union
EUA	European University Association
EURASHE	European Association of Institutions in Higher Education
HE	Higher Education
HEA	The Higher Education Authority (HEA) statutory policy development body and funding for Irish HE.
HEInnovate	An on-line tool sponsored by The EC and OECD, to strategically self-assess high level innovation dimensions of HEIs
HEIs	Higher Education Institutions
HOD	Head of Department
HOS	Head of School

IOT	Institute of Technology
KEYS	KEYS to creativity and innovation: Teresa Amabile's instrument to assess organisational creativity
L	Lecturer
LTSN	UK Learning and Teaching Support Network
NFQ	National framework of qualifications
NPDV	(Neologism) New Programme Development and Validation Processes
NPM	New Public Management
OECD	The Organisation for Economic Co-operation and Development (OECD)
Oireachtas	The Irish state legislature (houses of Irish parliament)
QQI	Quality and Qualifications Ireland (QQI) is a statutory body with express functions including the validation of programmes of education and training provision in Ireland
QSR NVivo	A qualitative data analysis computer software package produced by QSR International
RQ1; RQ2; RQ3	Research questions 1, 2, and 3
RTC	Regional Technical College (predecessor entity to the IOT)
SM	Senior Manager
TCI	Team Climate for Innovation, an instrument developed for innovation measurement by Anderson and West.
UCAS	The Universities and Colleges Admissions Service
UK	United Kingdom
USA	United States of America
WEI	Work Environment Inventory - developed from Amabile's KEYS creativity measurement instrument.

1 Introduction

Csikszentmihalyi's (1997) analogy of air and tinder below refers to the importance of environmental factors in creative endeavour:

> To say that the theory of relativity was invented by Einstein is like saying that it is the spark that is responsible for the fire. The spark is necessary, but without air and tinder there would be no flame (Csikszentmihalyi, 1997, 7).

Csikszentmihalyi's quote fittingly introduces this study into the climate for creativity and innovation in Irish Higher Educational Institutes (HEIs), as it highlights the multiple factors involved in the successful implementation of creative initiatives. This study explores the multiple factors involved in bringing through creative initiatives in Irish higher education institutions.

Research into the factors which impact on academic creativity and innovation in Irish Institutes of Technology (IOTs) is timely, as the sector is currently facing significant structural challenges. Many of these institutes, initially designed to award qualifications at sub-degree level, now are on the verge of strategic mergers and re-designation as technological universities. This is occurring in spite of financial constraints. Over the last two decades in Ireland, at a national level, financial austerity measures and "interventionist policy instruments" have "imposed a significant workload on a stretched set of institutions" (Thorn, 2018 184). In addition, the competitive challenges presented by a growing and relatively more prosperous university sector and the projected amalgamation of several regional clusters of IOTs to provide for new technological university entities have led to increased uncertainty in the sector. Furthermore, the increasing massification and internationalisation of education systems and the advent of new technologies for teaching and learning have generated significant global competitive challenges for higher education providers worldwide. In this current rapidly moving environment, it is imperative that our institutions deal with change effectively. One way of ensuring that we facilitate organisational learning and change is to foster a creative climate in our institutions.

This creative climate study provides comprehensive insights into the current working conditions on the ground inside the IOT research venues and it identifies the multi-level factors to be addressed in order to bring creative and innovative initiatives through the system. Recommendations are made which could, if addressed, lead to more creative, flexible and innovative HEI systems, provided the conditions, such as effective leadership; collegial trust and management support and training, identified in this study are fostered and enabled. Hence, this study provides a valuable contribution to the understanding of the working lives of the professionals within the IOT system and the challenges and complex multi-level factors they face, at a time of imminent deep structural change.

I have worked as an academic within the Irish Higher Education (HE) sector for several years. During this period, I have experienced challenges in my attempts to bring creative new initiatives through the HE system. Specifically, as part of a team of academics in an Irish Institute of Technology (IOT), difficulties were experienced in attempts to develop and validate creative new programmes of learning for prospective students. These issues were caused by several factors, such as for example, the number and complexity of regulatory controls and the demands of industry partners and other stakeholders. However, despite our team's challenging experiences bringing creativity through the system in practice, HE policy at state and EU level places increasing emphasis on creativity and innovation development in higher education environments (European Commission, 2003; Davis *et al.*, 2008; EPRS, 2014). I was interested in understanding the reasons behind the system impediments to creative programme development and finding out if academics in other institutions were facing similar issues in their professional practice.

This research documents Irish academics' experiences of bringing through creativity via their involvements within one selected academic practice in five Irish HEIs: The New Programme Development and Validation Process (NPDV). Having set out to examine a small number of institutions in Ireland, it is not expected that the findings can be generalised to apply to all the higher educational institutions in this jurisdiction. However, at the outset it was expected that this research project, would identify and elucidate the key

factors which have impact on academic creativity and innovation via the NPDV process in the selected institutions. I selected a Constructivist Grounded Theory Case Study methodology to explore the experiences of 20 academics from the five HEIs. Data was gathered via semi-structured interviews and multi-level documentary analyses of regulatory policies. QSR NVivo was the database employed to facilitate the data analysis process.

The literature review in this study will show that higher education policy initiatives at Irish national and European levels promote the development of creativity and innovation in academic environments (E.C., 2011; Hunt, 2011; Ferrari, Cachia, & Punie, 2009) yet academics appear increasingly constrained by an apparent *"*disconnect between the claimed valuing of creativity and actual managerial practice" (MacLaren, 2012, 167). In Ireland and the United Kingdom (UK), academics are requested to encourage innovative capabilities in graduates and undergraduates, yet simultaneously they themselves have become subject to greater academic workloads and the effects of sector rationalisation (McGoldrick and Edwards, 2002; DJEI, 2008; PSA, 2010). This situation is reflected by academics across Europe. Shattock (2010) claims, that due to recessionary state funding dependence, in most European Union (EU) countries, the state will become more powerful in relation to Higher Education that it has been, and that the EU is seeking to increasingly align the economic potentialities of higher education to achieve the economic goals of the Union.

We will see that several academics criticise as excessive, this alignment of higher education to economic goals of the European Union. MacLaren (2012) is critical of the harnessing of creative talent for capitalist productivity and capital accruement in highly competitive environments. He claims that, contrary to the encouragement of positive experimental cross-fertilising creativity, current governance policies promote socio-political conformity; discourage critical questioning, undermine collegiality and generate greater academic insecurity, whilst creating a climate inimical to the generation of intellectual creativity. He also claims that, contrary to policy rhetoric, creativity is not actively fostered within Higher Education (HE) work environments:

> Whilst most of the rhetoric of current educational policy champions creativity and innovation, structural reforms and new management practices in higher education run counter to the known conditions under which creativity flourishes (MacLaren, 2012, 159).

Much research has been conducted into the benefits of creativity in the knowledge economy and innovation development initiatives in teaching and learning (Oliver, 2002; Karakas, 2010; Karpova, Marcketti and Barker, 2011; Davies *et al.*, 2013), but the literature review which is presented in Chapter 2 in this study, found a scarcity of research into the attributes of a climate conducive to creativity and innovation in HE environments in Europe. Yet, the climate conditions under which creativity flourishes have been widely researched in commercial environments, (Siegel and Kaemmerer, 1978; Csikszentmihalyi, 1991; Ekvall, 1996; Amabile, 1997; Anderson and West, 1998; Amabile and Pratt, 2016). To my knowledge, only one study systematically exploring academic experiences of creative climate dimensions within a public sector HE institution in Europe has been conducted (Ekvall and Ryhammar, 1999), though others have attempted to define and capture creative teaching and learning initiatives in HEIs (Boulos, 2013). This HEI climate for creativity research deficit persists, despite the creativity development agendas of the Irish state; European Commission (EC) and European University Association (EUA), which promote HE creativity and innovation as a means of social and economic advancement within a European knowledge society (EUA, 2007).

This research project aims to address the research deficit, to some extent, in an Irish context, by exploring academics' experiences of the provision for academic creativity and innovation within four Institutes of Technology (IOTs[1]) and one sample university in Ireland. The process or lens employed to examine this, is the New Programme Development and Validation Process (NPDV).[2] Within this NPDV process, academics have an

[1] See the detailed explanation of the objectives of IOTs in the section: *A brief history of Irish Institutes of technology* later in this chapter.

[2] The New Programme Development and Validation process is the process academics engage with to progress new ideas for programmes of undergraduate learning, such as a bachelor's degree in business studies, for example. NPDV is understood here as the entire programme development process from the initial ideation phase right through to the writing up of module documentation and including the complex process of validating the new programme of studies.

opportunity to be creative and innovative by designing and developing a new programme of study.

1.1 Research aim and research questions

The aim of this study is to achieve a greater understanding of the provision for academic creativity and innovation in HE professional practice in Ireland and to uncover the factors which have impact on academic creativity and innovation within Irish HEIs, specifically within Irish Institutes of Technology (IOTs). The academic practice chosen to facilitate this study is new programme development and validation (NPDV). Academics from four IOTs and one university, were invited to discuss what it means to be creative and innovative in their work environments; to describe their experiences of recent programme development and validation processes and their views on how this process provides for academic creativity and innovation in practice. The following research questions were developed to address research objectives:

RQ1: How do Irish Institute of Technology academics define and value creativity and innovation within their professional practice in generic terms?

RQ2: How is academic creativity and innovation supported in practice by the new programme development and validation process (NPDV) in Irish IOTs?

RQ3: What dimensions of the broader HE climate hinder / foster academic creativity and innovation?

1.2 Definition of the principal concepts

Innovation

Innovation is defined in this research project as “the process of deliberate insertion of effective novelty into a functioning system” (Cropley & Cropley, 2009, 27). Further conceptualisations of innovation are provided in the literature review (Chapter 2).

Creativity

Arthur Cropley defined creativity as the “generation of effective novelty” (Cropley & Cropley, 2009, 25). Creativity is seen as a precursor to innovation

and as essentially present throughout the process of innovation (Rickards, 1996). Creativity emerges within the literature as context dependent and appears to "acquire its full meaning after a successful process of communication between the creator (…) and the judges or audience" (de Sousa, 2011, 8). Creativity researcher Teresa Amabile, describes creativity as:

> A process (evidenced by products) that can be influenced by both internal and external factors—by cognitive skills, work habits, and social-environmental variables (Amabile, 1983, 373).

We will see in the literature review that there are differing agendas for creativity promotion in Higher Education (HE). Whilst HE policy at national and at EU level value creativity as a means of generating innovative products and services to compete in a knowledge economy and promote a knowledge society orientated creativity agenda (EUA, 2015), further benefits of creativity development in higher educational environments "to continually adapt and invent in an ever-changing and increasingly complex world" (Jackson, 2006, 1) are referenced by several academics. This second, wider characterisation of creativity fits with the notion of an HE system which prepares its inhabitants for human life, which is not "standardized, mechanistic and linear" (Robinson, 2011, 59) but organic, multifaceted and unpredictable.

The argument is made in the literature review that the wider characterisation of creativity, further developed in higher education will contribute, not only to beneficial economic endeavour in a knowledge society, but will do so also by developing individual human potential and a "better, more meaningful and more fulfilling way of life" (Florida, 2012, xix). This broader version of creativity might be considered a modern extension of the Humboldtian Bildung[3] model, where educational ideals such as the pursuit of truth and the development of students as self-cultivating, autonomous individuals and

[3] An interpretation of Bildung is presented by Waters et al. (2015). They explain it as a set of cultural principles for organising higher education (originating in Germany), that surpasses both careerism and disciplinary silos. It is generally translated as education, but it means more than this and dictionary definitions reference terms such as self-cultivation; philosophy; personal and cultural maturation and existentialism. Bildung is described as the protest of poets and thinkers against the pressures of credentialism and the employment-orientated financial seduction of graduates (Waters *et al.*, 2015).

world citizens, in an environment of academic freedom, are objectives. The Humboldtian research-led broad-based liberal education goes further than a purely economic focused perspective or fixed path accelerated professional pathway. It focuses more holistically on the development of the person, which in turn, it is argued in this thesis, can result in creative initiative development for the betterment of the economy and of society in general. These debates, which locate this study in a wider philosophical context, are further explored in the literature review.

Climate

The concept of climate is referenced in relation to the higher educational environment and is defined in this study as: a conglomerate of attitudes, feelings, behaviours and norms which continuously interact with and characterize life in the organisational setting. The subjectivity inherent in this definition is acknowledged. This definition has been adapted from Amabile et al. (1989) and Ekvall's (1996) research into the climate for organisational creativity and innovation. Further discussions regarding creative climate definition will be pursued later, in Chapter 2.

Creative Course

When the term "Creative course" is referenced in this study, it is understood to be a (typically undergraduate) programme of learning which is creative in terms of how the programme is designed. In other words, the process of designing the programme will have a creative element. There may be, for example, a new combination of disciplines presented within the programme, such as for example, combining artificial intelligence technology to nursing practice or applying studies in sociology to digital technologies. The philosophy of the programme may be new to the field or otherwise innovative. The target market segment; the method of delivery or the method of assessment may be innovative, for example the programme could be delivered to a particular segment of a global audience and employ a combination of new digital technologies for learner-lecturer interaction.

Generally, the term “creative course” does not refer in this study to the development of techniques to enhance learner creativity. However, it is possible that when you involve someone in a programme which is creative by design, and led by a group of enabled creative academics, it follows that a by-product of that programme, may be enhanced graduate skills for creativity. One particular example of a creative course is that of the BSc in Digital Media and Society. This is an NFQ Level 8 programme of learning which combines the disciplines of sociology, business and digital technology to provide for the development of a socially conscious technologist who understands how to communicate and provide for employer needs both in the social work field and in the business or technology fields. This programme is creative in the combination of disciplines, as this is a novel disciplinary configuration for undergraduate studies. The designation of what is a creative programme, is decided by the relevant disciplinary academics in the field as they are the gatekeepers of the field.

Higher Education and Institutes of Technology

Higher Education, within the Irish jurisdiction, is provided by seven universities; fourteen Institutes of Technology (IOTs); five teacher training colleges; some other smaller specialist institutions and private colleges (Sullivan, 2015). There are several change initiatives currently being introduced which will eventually lead to the amalgamation of some of these IOTs and create new technological university HE entities. Legislation has been approved to facilitate these initiatives (eISB, 2018). The Irish Higher Education Authority (HEA) statistics for academic year 2016/17 showed that there were a total of 180,610 registered full time undergraduate students in HEIs funded by the HEA in Ireland, of which 37% or 67,636 undergraduates were enrolled in the Institutes of Technology (HEA, 2017). IOTs provide for a wide range of disciplines at undergraduate and postgraduate level. Their principal function by law is:

> To provide vocational and technical education and training for the economic, technological, scientific, commercial, industrial, social and cultural development of the state with particular reference to the region served by the college (Regional Technical Colleges Act, 1992, sec. 5).

1.2.1 A brief history of Irish Institutes of Technology

Irish government proposals were announced to launch new third level colleges in 1964 to enhance the provision for third level education in the country. In Ireland at that time, the urban regions were well served in terms of higher education provision but there was a shortage of appropriately qualified personnel in the regional areas, inhibiting economic expansion. Thus, a need for apprentice and technician courses unserved by existing HE institutions arose. A government steering committee recommended nine regional technical colleges (RTCs) be established and located in regions which were identified to head up the industrial expansion (DES 1967, 11), representing a paradigmatic shift in Irish education policy. Personal development education was replaced by a human capital paradigm as an institutional rationale for education (O Sullivan, 1992). Thus, the RTCs, or present day IOTs, together with the existing Dublin technical colleges, advanced the dual educational tradition in Ireland. A liberal education was fostered for the elite society and middle class and a vocational led education was to be designed for the less wealthy. There were skills shortages in newer industries and the government intervened in the system to facilitate greater education and training provision (Heraty and Morley 1998, 90). From this point on, the technological sector (the nine RTCs, now called IOTs) became more industry focused (Duff, 2011). This industry focus is still evident today, however there have been significant changes in the provision of higher education at global and national levels. Technology innovations are leading to increasingly rapid knowledge consumption and obsolescence, giving rise to bigger questions about the design of learning relevant to constantly changing societal needs. In the literature review chapter of this thesis, higher education philosophical debates are placed in juxtaposition, and it is suggested that contemporary national and EU driven educational policy focuses excessively on servicing short-term industry needs, to the detriment of the holistic learning development of the individual, in preparation for the challenges of work and societal change.

The HEIs in Ireland and indeed in most of the EU member countries are regulated by programme development and validation protocol, guided by Standards and Guidelines for Quality Assurance in the European Higher

Education Area (ENQA). In Ireland, Quality and Qualifications Ireland (QQI) is a statutory body with express functions including the validation of programmes of education and training provision in Ireland (ENQA, 2015b; QQI, 2017). ENQA guidelines and QQI standards are the contemporary regulatory instruments which guide the institute quality documentation reviewed for this research. The Higher Education Authority (HEA) is the statutory planning and policy development body for higher education and research in Ireland, this body grants funding for new programmes and is accountable to the Minister of Education and Skills in Ireland within the Irish Department for Education and Skills (DES).

New Programme Development and Validation Processes (NPDV)

Quality and Qualifications Ireland (QQI) controls the quality of Irish higher education offerings. QQI is responsible for the regulation of programme validation, or the approval of a set programme of study, leading to a qualification within Irish HE. QQI explicates programme validation as follows:

> A programme of learning is validated, where QQI confirms (…) that the provider of learning has satisfied it that an enrolled learner of that provider will acquire, and where appropriate, will be able to demonstrate, the necessary knowledge, skill and or competence to be able to justify an award of QQI being offered in respect of that program (QQI, 2016, 18).

The QQI agency in Ireland is the successor agency to the National Qualifications Authority of Ireland. Prior to the establishment of QQI in 2012, the IOTs were subject to a heavy burden of quality protocols, originating from the original vocational education committees, then the National Council for Educational Awards (which became the Higher Education and Training Awards Council) and the Further Education and Training Awards Council. QQI was established in 2012 following the amalgamation of these agencies with the Irish Universities Quality Board, unifying quality regulation for the entire HE sector in Ireland. QQI is a member of the European Association of Quality Assurance Agencies for Higher Education (ENQA) and is thus greatly influenced by European Quality Assurance protocols.

An interesting perspective in relation to ENQA regulation was found in a 2012 survey of quality agencies: European QA agencies do not consider it within their remit to “contribute to the promotion of innovation in HE” (Grifoll *et al.*, 2012, 13). Thus, the agents of increasing control levels, which regulate the HE quality assurance process, do not regard that QA processes should actively foster innovation. Indeed, the degree to which the Bologna policy agenda (which has led to the harmonisation of HE quality procedures within European Union (EU) member states) is in practice, supportive of creativity and innovation in HE is a subject of much debate (Aldson, 2009; EurActiv, 2009).

Programme validation is the term used in Ireland for a process, known also in European HE documentation, as programme accreditation. Validation or accreditation has been defined as “the establishment or restatement of the status, legitimacy or appropriateness of [...] a programme of study” (Harvey, 2004, 208). The term programme refers in this instance to a programme of study, designed by academics, encompassing a designated combination of modules, of three to four years’ duration, leading to the award of a degree. This study is focused on the development of the undergraduate degree. The neologism, NPDV is understood in this research context to include all aspects related to new programme ideation, design, development and the establishment of internal and external legitimacy and certification of the programme from the relevant institute and national authorities. NPDV is a creative process, yet it is heavily constrained by regulatory procedures. According to Harvey (2004), programme accreditation processes represent a “power struggle which impinge on academic freedom”. NPDV sits on the threshold between academic creativity and regulatory constraint. This study set out to understand the factors within the academic climate, which impact on creativity and innovation, via a closer investigation of the NPDV innovation process.

All Irish institutes of technology have some form of preliminary new programme development authorisation and internal validation mechanisms. Following the internal validation mechanisms, all institutes are subject to an external validation process, then the programme is approved by Academic Council and executive board. Table 1-1 below shows the standard NPDV

decision-making process flow which occurs in the institutes of technology. Chapter 4 will elucidate this diagram further, in an examination of the internal and external processes in each research venue.

Programme development and validation process flow

Ideation: preliminary discussions: subject peers, industry partners and academic experts in field

↓

Discussion with peers at programme board (disciplinary field peers).

↓

Establishment of development team & proposal form completion (P1)

↓

Proposal sanction by executive board of institute

(Registrar; president; financial controller; higher executive management).

↙ ↓ ↘

Rejection | Conditional approval

↓

Approval

↓

Programme development meetings

Preparation of documentation for validation (P2) and Internal validation process[4]

↙ ↓ ↘

Rejection | Approval | Conditional approval

↓

Documentation for external validation submitted to office of registrar

Documentation draft entered on academic module management database (module manager)

↓

Office of registrar organises formal external validation and external validation takes place

↙ ↓ ↘

Rejection | Conditional approval

↓

Approval

Definitive programme documents drawn up

Registrar's office notifies CAO and QQI of new programme to be listed

Academic vacancies advertised if necessary and budget allocated to programme management

Programme enters programmatic review cycle

Table 1-1. NPDV standard process flow

[4] This process differs across institutes, see also table 4-1.

1.3 Research project rationale

The European Commission (EC) and the European University Association (EUA) promote creativity and innovation development in HE as a major driving force towards social and economic advancement within a European knowledge society (EUA, 2007). Further, many educational researchers believe there is a need to reform the traditional HE model to support creative thinking and engender response to rapid change (Davies, Jindal-Snape & Collier, 2013; Costello, 2007; Friedman, 2005; Robinson, 2001).

Yet, much of the HE research on creativity enhancement in higher education focuses principally on documenting tasks and interventions within lectures to develop undergraduate creativity (Beghetto and Kaufman, 2010; Sisk, 2014) and EC funded research projects to explore (Ferrari, Cachia and Punie, 2009) and communicate how HE could better promote economic objectives (European Commission, 2011). Ironically, apart from the HEINNOVATE project (Dimitrov and Hofer, 2014), negligible attention is afforded to nurturing creativity at a strategic level within the higher education institution among academic staff, and to developing systems within a HE climate to support academic creativity and innovation. In fact, the opposite is claimed by several academics in the literature to be the norm, structures and controls are seen to increasingly dismantle academic autonomy and initiative (MacLaren, 2012; Moutsios, 2013). In fact, the HE system in Ireland is heavily influenced by the EU creativity agenda, which appears to be particularly focused on meeting projected growth in knowledge intensive jobs (European Commission, 2011). This agenda is criticised in the literature as a neoliberalist means of extracting surplus value from creative labour (Harvey, 2004; Moutsios, 2013).

Policy calls for educators to promote creative skills in their teaching and learning yet does not appear to actively foster and support academic creativity within HE work environments. The kind of creativity sought by the EU creativity agenda appears to be very specific: creativity that furthers competitiveness in a knowledge economy. Yet there is a certain recognition within some EU policy directives, that HEI structures do not support

creativity and innovation. For example, the European University Association (EUA) advise that:

> Purely mechanistic approaches geared toward reaching predefined targets will certainly not allow European H.E. institutions to contribute adequately towards this ambitious objective [of a knowledge society] (EUA, 2007, 10).

The mechanistic metaphor used in this EUA report into creativity and innovation in higher education, is suggestive of problematic organisational system flexibility issues acknowledged as inimical to creative practices. Though resistance to change has been recognised as a feature of large established organisations (Katz and Kahn, 1978; Olson, 1982), European HE institutions have been adapting remarkably to change via the Bologna process, over the last fifteen years. A large amount of remarkably uncontested (Keeling, 2006) HE policy change is ongoing, much of which can be positively attributed to the Bologna Process (Crosier and Parveva, 2013), initiated to facilitate HE educational exchange and developed to extensively harmonise academic systems (…) across the EU (Altbach and Knight, 2007). From 2009, HE quality systems and standards which include programme development and accreditation processes (NPDV) have become a major focus within the Bologna process (BP) as a means of harmonising HEI systems across the EU. The literature will uncover perspectives which argue that excessive homogenisation and harmonisation stifle creative endeavour.

1.3.1 Rationale for the focus in this research on NPDV

Programme validation is principally regulated by HEI and state Quality Assurance (QA) systems, and generally focuses on programme resources, programme design and content; meeting market needs; teaching and learning methodologies and assessment mechanisms employed. The choice to concentrate my research focus on this area is justified, as NPDV is the HE equivalent to the commercial organisations' new product development function. In the design and development of new programmes, there is an opportunity for academics to develop creative ideas into innovative programmes of learning. By focusing in on NPDV policy and

practice, I can observe how the process supports and provides for academic creativity and innovation, and I can draw on the examples of provision for creativity and innovation in this academic innovation process, to enhance understanding of the factors which have impact on organisational creativity and innovation in the broader HE climate.

In the literature review, there are many documented NPDV regulatory policies and standards, however, research papers specifically discussing how the Irish NPDV process works in practice, have not been found. This research will not only address the deficit in research in relation to HE organisational creativity and innovation in practice, but also will address a research deficit into Irish HE new programme development process study. I have undertaken this research because I believe that the NPDV process will provide me with rich data and sufficient information, to assess the factors which have impact on creativity and innovation in practice, within HE institutes in Ireland. In line with my assumption, Moutsios (2013) claims that it is perhaps within the QA literature considering accreditation control processes where one will see the greatest bureaucratic constraints on creativity and innovation (Moutsios, 2013).

1.4 Overview of thesis content

The literature review in Chapter 2 is confined to writings and policy documents from Ireland, the UK, Europe, Australia, Canada and the USA. It explores conceptualisations of creativity and innovation and argues that these are desirable constructs which can be developed, but which are not sufficiently promoted in HE environments (Cropley and Cropley, 2009, 1). Recent calls for the promotion of creativity and innovation in HE environments service different agendas, from that of furthering a European knowledge society, to that of enhancing the holistic, self-realising development of individuals. It is argued that these agendas are not mutually exclusive and that maximum benefits will accrue from combining both sets of objectives. However, claims are made that increasingly restrictive controls in HE environments collide with high level creativity and innovation policy ideals. This culture of control contrasts sharply with that of high trust enterprises nurturing employee creativity and innovation (Steiber and

Alänge, 2012). Widely researched in industry, Amabile's Componential Model for Organisational Creativity and Innovation (Amabile, 1988, 1997; Amabile and Pratt, 2016) is presented and we find that, in contrast with the commercial sector, a significant research deficit exists in relation to creative climate studies within HE environments. The final section of Chapter 2 explores the literature in relation to curriculum development and validation processes, and the argument is made that HE accreditation mechanisms across the EU are increasingly aligned with EU employability strategies and that these may restrict academic creativity within this process. The chapter ends by presenting the case for this study into the factors which affect creativity and innovation in HE climates, using the academic process of NPDV as an appropriate observation lens.

Chapter 3 describes the methodological design selected. The qualitative interpretive approach was identified as appropriate and a Constructivist Grounded Theory (CGT) case study research methodology was chosen to drive a systematic inductive approach to the generation of theory, providing for the subjectivity inherent in respondent-researcher interaction. Semi-structured interviews were employed to gather 20 Irish HEI academics' experiences of NPDV, in addition to a documentary analysis. QSR NVivo software was employed to assist with data analysis.

Chapter 4, the first of two findings chapters in this thesis, is more descriptive than analytical as it concentrates primarily on setting the context for the more detailed presentation of findings and the discussion in chapter 5. This chapter addresses research question 1 which relates to how respondents' value and define creativity and innovation. We discover that participants do not question their personal or team skills for creativity and that they value creativity and innovation as a collaborative practice in NPDV. This chapter also addresses part of research question 2 which queries how the NPDV process inside each institute provides for academic creativity and innovation. This chapter provides us with a comprehensive overview of curriculum development process policy in the selected IOTs, a process which has not, to my knowledge been studied to this level of detail before in the Irish IOT sector.

Chapter 5 is the second, more theoretically focused of the two findings chapters. This chapter is important as it uncovers the factors within the HE environment having impact on academic creativity and innovation and introduces is one of the principal contributions to knowledge of this research study. I present three layers of factors found in this study to have impact on academic creativity and innovation in the HEIs examined. I then show that, on two levels, there is a close similarity between the research findings in this study and Teresa Amabile's componential model of organisational creativity and innovation (1988). I then address a deficit in Amabile's model and build on her model to illustrate the three layers of factors having impact on academic creativity and innovation in Irish HEIs. I do this by adding a third meta-organisational[5] level of factors to create: *the three-level model of creativity and innovation in higher educational organisations.*

Close attention is paid to the detail within the data gathered and we find, despite the complex and challenging regulatory environment common to all institutes, that to nurture academic creativity and innovation, certain conditions must prevail inside a HEI. Trust, professional respect, innovation support and effective leadership for innovation are among the important attributes of a HEI climate conducive to creativity and innovation. Institute case studies are contrasted, and these attributes were found to exist in one of the four IOTs examined, positively contributing to academic creativity and innovation within the NPDV process.

Chapter 6 provides a synopsis of the principal findings of this doctoral research study. Each significant finding is accompanied by an associated recommendation. The implications of the findings are discussed in addition to the potential of the newly developed *three-level model of creativity and innovation in higher educational organisations* to assist HE policy development to support HEI creativity and innovation. This new model is the first model to comprehensively gather together and illustrate the factors, drawn from the Irish IOT sample, which impact on academic creativity and

[5] Meta-organisational refers to a level of abstraction beyond the organisation. Here it represents factors such as state policies and market intervention measures; EU quality control regulations; and global economic and competitive pressures.

innovation in higher educational organisations. Finally, the limitations of this study are outlined and suggestions for further research are proposed.

2 Literature review

2.1 Introduction

In addition to adherence to state-level legacy quality protocols prior to the current QQI agency standards, in Ireland, policy and practice in curriculum development are both shaped and constrained by EU influences, and this is attributed in part, to Bologna Process[6] reforms. Some objectives and themes promoted by the EU in relation to HE programmes of learning include employability, the knowledge society agenda, internationalisation, harmonisation of qualifications, transferability of learning and common programme learning outcomes across European HE disciplines. Though Bologna has given rise to widespread HE reforms across Europe, "scepticism of the Bologna Process's apparent benefits has been voiced (…) within the academic press" (Karran and Löfgren, 2012, 101) across Europe. It is argued that the function of higher education represented by Bologna HE reform and evident in the (Irish) National Strategy for Higher Education to 2030 (Hunt, 2011), is increasingly overly aligned with the generation of human capital, commodifying human abilities:

> Higher education is to be tapered ever more finely to the perceived needs of the labour market. The skills/learning-outcomes model has thus become a uniform point of reference for a cluster of other management driven concepts which have contributed, in the neoliberal era, to the transformation of the landscape of higher education (Holborow, 2007, 96).

In effect, increasing controls and prescriptive approaches to higher education appear to be, in practice, generating a creativity paradox. Academics are requested to encourage innovative capabilities yet

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[6] The Bologna Process is:

> "A concerted action [for higher education reform] launched in June 1999, in the northern Italian city of Bologna, (…) The higher education ministers from 29 European countries signed the Bologna declaration, which aimed to create the European higher education area (EHEA) by the end of 2010, recognising the importance of learning as a pre-requisite of societal advance" (Etzkowitz et al., 2012, 147).

Participant numbers in the process have increased, 46 EU and non-EU countries signed the 2009 Leuven follow-up agreement. Bologna reforms include: widespread adoption of 2-cycle degree programmes; the establishment of a credit transfer system; the introduction of common quality assurance principles and student-centred and problem-based learning principles. The original focus was to enhance competitiveness of the EHEA, harmonise qualifications' frameworks and facilitate student international mobility.

simultaneously have become subject to greater academic workloads and sector rationalisation (McGoldrick and Edwards, 2002; DJEI, 2008; PSA, 2010). Administrative procedures occupy lecturers' time to the detriment of time spent on independent research and lecture preparation and delivery. By limiting freedom of academics to engage in the disinterested pursuit of knowledge, individual creativity is restricted. In restrictive macroclimates, space for creative activity becomes more limited.

Thus, while recognising the importance of the Bolognese pragmatic approach to HE, it is suggested that a more balanced vision for HE in Europe would also consider the more holistic Humboldtian HE ideal of fostering a broader research aligned curriculum, aiming to develop self-determining graduates. The alliance of both the employability strategic perspective and the Humboldtian philosophical idea would lead to a broader more creativity responsive focus in academic circles, unleashing creativity talent. Consistent with this cross sectorial approach, yet cognisant of potentially contradictory philosophical sectorial objectives, this review takes the creative approach of examining and learning from models of creativity and innovation developed for commercial environments and considering their application to the educational environment. Creativity researcher and Harvard head of business research, Teresa Amabile, has developed a widely cited comprehensive model to illustrate the attributes of commercial creative environments: *The componential model of organisational creativity and innovation* (Amabile, 1983, 1988, 2012; Amabile and Gryskiewicz, 1989; Amabile and Pratt, 2016). This and other models are reviewed and considered later in this chapter.

Framed within these broader philosophical debates, this literature review sets out to uncover what definitions, models and attributes of organisational creativity and innovation are most conducive to academic creativity and innovation in HE curriculum development. A research deficit is found in relation to the study within HE, of organisational climate attributes supportive of academic creativity and innovation in professional practice. This paucity of research is remarkable, given the contemporary political interest in the development of creativity and innovation in higher education institutions

(HEIs). State policy and academic press contributions in this field from across the EU; Australia; Canada; the UK and Ireland, are considered.

Standing at the threshold between regulatory constraint and academic creative development endeavour, the process of curriculum development or New Programme Development and Validation (NPDV) is often where bureaucracy and creative development collide in HE environments. Yet, to my knowledge, the NPDV process has not been extensively examined in either Ireland or the UK with a view to documenting and understanding the support required for academic creativity and innovation in curriculum development, (though a comprehensive support model for NPDV, examined in this chapter, was found in Guelph University in Canada). However, before engaging in a detailed examination of creativity and innovation within academic processes, we must gain some insight into the philosophical debates and broader interpretations linked to the concepts of creativity and innovation.

2.2 Conceptions of creativity and innovation

This section argues that creativity is a ubiquitous construct which is widely accessible and can be developed, not an innate capability that cannot be taught or learned. Creativity development is seen as beneficial for many reasons. It drives progress in many disciplinary fields from The Arts to Science, Economics and Technology yet “the philosophy of creativity is still a neologism in most quarters” (Paul and Kaufmann, 2014, 3). This study locates creativity within Maslow’s humanistic tradition of self-actualisation, the kind of creativity which “shows itself in the ordinary affairs of life”, manifests in an ability to “express ideas without strangulation” and “fear of ridicule”, involves an ability to “bring opposites together” and is a defining characteristic of health itself in self-actualizing humans (Maslow, 1968, 21).

Highly contested, multiple methods of conceptualizing, analysing and implementing creativity exist. Traditionally, within person centred creativity research and philosophy prior to the 1950s, the dominant belief was that only certain individuals could be creative. Kant in his *Critique of Judgement* originally published in 1762 espoused creativity as innate or celestially gifted

artistic genius, enabling production of exemplary original works, via a process which cannot be learned (Kant, 1790). Similarly, within Romanticism, imagination was the source of all creative power and the hero-artist according to the romantics, was the supreme creator who:

> Struggles with the unconscious to give shape, truth and feeling (expression) to those forces – natural, spiritual and cultural (Peters, 2009, 42).

Wider contributions to the philosophical debate were fuelled by a wave of interest in modern creativity research, prompted by Guildford's influential presidential address to the American Psychological Association in 1950 (Guilford, 1950) in which he challenged psychologists to attend to this neglected attribute of the human personality (Collins, 2010, 96). Following this address, Rhodes, making sense of the increased interest in the field of creativity inquiry (1961) categorised creativity research into the 4Ps of creativity: Creative Press; Creative Process; Creative Product; and Creative Person (Rhodes, 1961). Press, otherwise known as creative climate, refers to the pressure exerted by the psychosocial and structural climate. Creative Process literature covers both thinking processes within creative individuals and the processes involved in developing a creative product. Creative Product literature concentrates mainly on subjective criteria of the creative product.

Creative Person perspectives debate the extent to which creativity is innate in individuals. Perspectives range from the belief that creativity is innate and cannot be learned (this unique creativity is known as *big C* creativity), to those who subscribe to the existence of a generic everyday creativity which can be developed, (known as *little c* creativity). Many writers claim that *little c* is potentially present in everyone (Csikszentmihalyi, 1997; Banaji *et al.*, 2010; Florida, 2012). Craft (2000), described *little c* in a broad analysis of creativity in education, commissioned by the UK Department of Education. She posited that this ubiquitous creativity is of benefit to the individual and society, employs imagination; permits possibility thinking and finding a way around emergent problems. Thus, the historical concept of creativity exclusive to the genius, was replaced and is no longer the dominant

creativity philosophy, at least within the educational context According to *The Rise of The Creative Classes* author, Richard Florida (2012):

> Every human being is creative … the essential task before us is to unleash the creative energies, talent, and potential of everyone-to build a society that acknowledges and nurtures the creativity of each and every human being. Creativity is truly a limitless resource; it is something we all share (Florida, 2012, xi).

Contemporary HE creativity development debates suggest that creativity can be affected by environmental factors, indeed the volume of peer reviewed papers evidencing increased student creativity levels following pedagogical interventions, reinforces the premise that creativity is a construct that can be developed (Baillie, 2000; Craft, 2000; Morrison and Johnston, 2003; McCorkle *et al.*, 2007; Sternberg and Kaufman, 2007; Karakas, 2010; Chen and Chen, 2011; Karpova, Marcketti and Barker, 2011).

This thesis adopts the dominant belief in a creativity which is potentially present in everyone and which can be developed. Creativity is understood as an accessible construct and is defined as the "generation of effective novelty" (Cropley and Cropley, 2009, 25). Establishing that the kind of creativity we are discussing is potentially accessible to everyone, is of significant importance, because if creativity were considered a biological attribute, exclusive to certain individuals, then any attempt to develop creative potential by elucidating the attributes of an environment conducive to creativity and innovation, would be unproductive and there would be little to gain from conducting a research study like this one which aims to uncover and understand the attributes of the HE environment supportive of academic creativity and innovation, via close examination of the NPDV process.

We turn now to examine the concept of innovation. Linked to creativity, it is relevant to this research as higher education policies at Irish state and at EU level strongly reference innovation development in HE as a strategic imperative (European Commission, 2003, 2018a; Expert group on future skills needs, 2015):

> Co-operation between universities and industry needs to be intensified at national and regional level, as well as geared more

effectively towards innovation (European Commission, 2003, sec. 3.3-14).

Innovation is seen as key to the emergence of the European knowledge society and is widely promoted in education policies in Ireland and across the EU. Innovation is generally understood as the process of implementation of creative endeavour and it is the term attributed to the deliberate provision of supports and mechanisms for creativity execution. Innovation has been defined as the successful implementation of creative ideas within an organisation (Amabile, 1996).

The terminology associated with the concept of innovation is aligned more closely than that of creativity to the knowledge society drivers in higher education. Efficiency, quality and competitiveness are constructs commonly associated with innovation. Located within the disciplines of economics and business, innovation is seen as the stimulus for economic and enterprise growth. The Austrian economist, Schumpeter (1943) argued that economic change centres around innovation and that the incentive for new product development is provided by the temporary monopolies often created by technological innovation (Carroll Pol and Carroll, 2006). Schumpeter believed that firms should “incessantly revolutionize the economic structure from within” by continuous creation of more effective processes and products (Schumpeter, 1943, 81–84). Schumpeter’s conceptualisation of innovation focuses on the implementation and marketisation of the new and is defined by end user exposure and commercialisation. Similarly, O’ Sullivan and Dooley (2008), equate innovation with the exploitation of creative concepts (O’Sullivan and Dooley, 2008), implying that the creative impetus is a precursor to the innovative process. Thus, innovation is regarded as the support and facilitation mechanism for the implementation of creative initiatives. For this study, a definition of innovation is employed, which does not attach itself exclusively to marketisation, commercialisation and business, but one which acknowledges the implementation mechanism of innovation and the prior essential creative input, without which there would be no execution. This study defines innovation as: “the process of deliberate insertion of beneficial novelty into a functioning system” (Cropley & Cropley, 2009, 27). The innovation focus in business and economics is on

the exploitation of the creative concept, with negligible emphasis on the human creative input required prior to innovation process engagement. In the main, commercial creativity and innovation process models concentrate on the implementation of creativity (the innovation phase) and do not emphasise the creative idea generation phase.

Yet Amabile's (1988, 2012) models of creativity and innovation in organisations place great importance on the process of individual creativity as a crucial element in the organisational innovation process (Amabile, 1988). Her research into creativity and innovation in commercial organisations might be interpreted as leaning towards the humanistic perspective, given that it crosses from the commercial field into that of psychological inquiry, emphasising the cognitive attributes and motivational drivers of creativity in individuals and teams. Her models are explored further in sections 2-6 and 2-7 of this chapter.

Whilst remaining conscious of the potentially different ideological focuses between the HE and the commercial environments (which are explored later), education systems could learn from innovation research studies conducted in commercial organisations. Having found only one Canadian model in the literature theorising the new programme or product development innovation process in the higher education sector (Wolf, 2007), I reviewed some of the innovation models developed for contemporary commercial organisations in an early attempt to uncover the underlying conditions and processes of an organisational climate conducive of creativity and innovation.

A review of commercial organisational innovation process models provided me with three key points which could be considered when developing a model in HE to support a creative and innovative climate. These included:

> The importance of a sequentially staged support process. Some of the models involved sequential, incremental and involved time-sequenced stages (Godin 2006, Cooper 1990). For example, Booz, Allen and Hamilton's new product development process has seven sequential stages: idea generation, screening and evaluation, business analysis, development, testing and commercialisation (Booz, Allen and Hamilton, 1982). Learning from these models to support innovation, processes should be broken down into stages,

and the issues relevant to each stage should be addressed in timely fashion.

The acknowledgement that the organisation must be responsive to the external environment. The network model of innovation highlights a necessity for external linkages within the innovation process (Rothwell and Zegveld, 1985) and Chesborough's (2003) open innovation model extends the boundaries of innovation beyond the firm.

The benefits of cross disciplinary fertilisation of ideas. The Cyclic Innovation Model (CIM) depicts innovation as a cyclical process where new innovations build upon previous innovations (Berkhout et al., 2007). Relevant to the HE context, CIM model designers suggest that institutional cultures with deeply rooted disciplinary boundaries will find cross disciplinary innovation fertilisation difficult to implement (Berkhout, Hartmann and Trott, 2010) and this would have to be consciously generated in the HE culture, as it is in the organisational and cultural configurations of firms like Google (Steiber and Alänge, 2012; Knapp, 2015).

This study of innovation organisational support systems has highlighted the need for interaction beyond the boundaries of the organisation; the benefits of breaking disciplinary boundaries leading to cross-disciplinary fertilisation and the importance of sequencing supports as required at different stages of the innovation process.

The emphasis in this review on commercial process creativity and innovation research is due in part to a relative research deficit into creativity and innovation support systems within higher educational organisations. Only one (Canadian) model specifically designed to provide in-depth iterative and ongoing HE curriculum development innovation support, inside a HEI, has been uncovered in this review (Wolf, 2007). Another, less process orientated curriculum initiative, includes workshops in the UK to support ideation in curriculum development (Dempster, Benfield and Francis, 2012) and at a higher level, an EU initiative has been undertaken aimed at HEI management, to raise awareness of the need to promote creativity and innovation strategically in HEIs across Europe. This is called HEInnovate and we will return to this later (European Commission, 2014). Though there have been many philosophical papers on the potential for imaginative curriculum development and a more creative kind of 'life-wide' programme development design in HE (Jackson, 2011), studies with in-depth review of

innovation supports in HE for curriculum development uncovered in this research, are limited.

We can infer from the HE curriculum development innovation process research and HE creative climate research deficits, that relative to the commercial sector, innovation in the higher education context has not been systematically theorised to the same extent. We might also infer that the extensive research that commercial environments have undertaken, proves their willingness to invest in uncovering and understanding the mechanisms required to facilitate and support organisational creativity. Thus, it is argued, there is a need for more research related to academic creativity and innovation support in higher educational environments, that is if the development of creativity and innovation in the HE environment is considered beneficial.

2.3 Beneficial outcomes of creativity development in HE.

Few voices have contested the benefits of creativity and innovation development in individuals and in organisations. The only (albeit generic) note of caution found in this literature review with regard to creativity promotion was voiced by Roger Scruton (1987) who suggests that creativity (in the wrong hands) can constitute a serious threat to the surrounding order (Scruton, 1987). In contrast, many benefits are attributed to creativity development in higher educational environments.

The holistic benefits of creativity development in individuals and the benefits to society in general are widely acknowledged. Professor Ken Robinson, renowned creativity in education academic, has fuelled the debate on the benefits of creativity in education since 1988. He posits that creative development promotes self-actualisation and realisation of potential (Robinson, 2011). Further, the Imaginative Curriculum Network[7], established in the UK in 2001 by Norman Jackson, founder at Life-wide Education & Creative Academic[8], explores and promotes creativity in HE

[7] For more information, go to http://imaginativecurriculumnetwork.pbworks.com/.
[8] Creative Academic, founded by Norman Jackson in 2015, is a community-based, not for profit, social enterprise promoting, developing & supporting creativity in HE available at http://www.creativeacademic.uk/.

education. The network is interested in examining the “things that really motivate and drive people to achieve and to develop themselves as unique and creative individuals” (Jackson, 2013, 1). An imaginative curriculum survey of HE academics in the UK found many respondents believe creativity is essential for “enriching individual lives and the wider society in which the University is embedded” (McGoldrick and Edwards, 2002, 20). Identifying a deficit in the curriculum in the promotion of creative endeavour, Jackson advances the view that there is “something missing in what [is] fast becoming an instrumental model of outcome-driven over assessed education” (Jackson 2013, 1).

> If the purpose of higher education is to help students develop their potential as fully as possible, then enabling students to be creative should be an explicit and valued part of their higher education experience. This is clearly not the case in 2008 (Jackson, 2008, 2).

Jackson believes that Higher Education Institutions (HEIs) must actively promote creativity in education to foster individual potential, and that it is not often a priority of our curricular design and assessment.

> Creativity as an outcome of higher education, at least in the UK, is often more by accident then design. All too often our curricular designs and assessment requirements at best ignore and at worse inhibit students’ creative development and self-expression (Jackson, 2011, 2).

The economic benefits of creativity development are also recognised in HE policy making at Irish and EU state level. Policy documents which influence the development of higher education programme outcomes in Ireland recognise that “creativity, design and innovation are key drivers of productivity improvement and are needed in all industries and in all occupations” (Expert group on future skills needs 2016, 25). European Union policies also promote the benefits of creativity and innovation in HE. However, the benefits of creativity and innovation development in HE environments service distinct agendas.

2.4 Key actors, agendas and approaches to creativity in HE

The European Union promotes an agenda for creativity, innovation and entrepreneurship via higher education policy directives addressed at member states of the Union. Ireland is a member state of the European Union (EU) and is therefore, heavily influenced by EU Education policies. Though each EU country is responsible for its own systems for education and training, EU education policy supports national actions, and addresses common challenges and contemporary drivers of higher education strategy (European Commission, 2018b). The Bologna process, initiated by the European Commission (EC) to facilitate access and mobility across education systems in the EU (Europa, 2009), has developed a mission to support the modernisation of education and training systems ensuring changing needs of the labour market are addressed. This process provides funding for and promotes education skills' development in areas of job growth. It also supports the demand for innovation and entrepreneurship in HE. Education and training 2020 (ET 2020) is the strategic framework developed by the EC (Council of Europe, 2009). Policies within this strategic framework, in addition to others communicated by the European Parliament; the European Commission and The Council of Europe, (EPRS, 2014) strongly influence the contemporary direction of Irish higher education policy. Several HE policies at European level employ the terms creativity and innovation in pursuit of a specific human capital facing agenda with a strong focus on employability orientated goals:

> Higher education and its links with research and innovation play a crucial role in individual and societal development and in providing the highly skilled human capital and the articulate citizens that Europe needs to create jobs, economic growth, and prosperity (European Commission, 2018b, 1).

In the EC communication: *The modernisation agenda for universities: education, research and innovation* (European Commission, 2006, 1), HEIs are advised to provide graduate qualifications, skills and knowledge to meet the needs of the labour market. Indeed, it is advised that graduate accession to the labour market should become a performance measure of HE success:

> Universities must also provide knowledge and skills geared to the needs of the labour market. In other words, graduates' qualifications

> must meet the needs of the labour market. All levels of education are concerned, including adult education. This approach must be in line with the agenda on lifelong learning. Innovative curricula, teaching methods and continuing or refresher training courses combining general and specific skills will help to meet these needs. Universities must also embrace an enterprise culture, and placements in industry must be recognised so that they can be fully integrated into courses. In this context, access to the labour market should serve as an indicator of the quality and performance of universities […]. This means, for example, that doctoral candidates wishing to work in research must acquire, in addition to their research training, skills relating to the management of intellectual property rights, communication, working in a network, entrepreneurship and team working (European Commission, 2006, 1).

A common theme is the requirement for the development of an education system to service the needs of a Knowledge Society. This term, defined here by the Irish Information Society Commission, refers to the new "intensity in the application of knowledge to economic activity" generated by "the digitisation of information and the associated pervasiveness of the Internet" (Information Society Commission, 2002, 2). In a 2002 Information Society Commission report to the head of the Irish government in Ireland, knowledge was claimed to have become:

> The predominant factor in the creation of wealth. As much as 70 to 80 percent of economic growth is now said to be due to new and better knowledge (Information Society Commission, 2002, 2).

Knowledge is now recognised as the driver of productivity and economic growth, leading to a new focus on the role of information, technology and learning in economic performance. The term "knowledge-based economy" stems from this fuller recognition of the place of knowledge and technology in modern OECD economies. (OECD, 1996 3). To address the needs of a knowledge society, the EC advises EU member state institutions to involve employers and labour market institutions "in the design and delivery of programmes" (European Commission, 2011, 5) as "there is a strong need for flexible, innovative learning approaches" (European Commission, 2011, 5). Knowledge is considered as the "ultimate economic renewable as the stock of knowledge is not depleted by use". The real value of knowledge to an economy is realised via knowledge diffusion, sharing it with others (Brinkley, 2006 4). Knowledge workers are those in "jobs requiring expert thinking and complex communication skills" (Brinkley, 2006, 30). With the

advent of the knowledge economy, the pace of change in technology and internationalisation has increased. Knowledge becomes outdated quickly, therefore high-performing workplaces will require their employees to have initiative; to be flexible; to be able to learn on their feet and be open to change (OECD 1996). According to the 1996 OECD report, people need to engage in "flexible and lifelong learning", as they will be continuously adapting to rapidly changing working environments. Narrowly focused employability education agendas may not provide adequately for these adaptive competencies.

In Ireland, a small open economy on the periphery of Europe, Irish social and economic policies are closely linked to trends in other countries, which see education as a principal route to competitiveness and economic prosperity (Irish National Economic and Social Council, 1993; Duff, 2011; Lynch, 2012). Duff (2011), in a paper reflecting on the influences on policy making in Irish HE, highlights an increased political tendency to leverage educational systems in Ireland and globally to further economic policy objectives. He claims there is a:

> Growing instrumentalist influence in policy provision with education/training systems increasingly becoming an important tool for governments in economic development terms (Duff, 2011, 9).

Similarly, in her paper describing the complex factors which have contributed to a market led education system, Lynch (2012) claims that Irish education has followed the international trend of educating for the market economy (Lynch, 2012, 98) and has lost sight of the aim of educating for personal development. Higher education, according to Lynch, has become a competitive consumer industry.

Implementation of this consumer orientated philosophy for education in Ireland is evident, for example, in the high impact policy report, the (Irish) *National Strategy for Higher Education to 2030*, known locally as *The Hunt Report*. This report calls for Higher Education to become the central player in the development of Ireland's culture of innovation (Hunt, 2011). The Hunt Report refers more often to skills development than educational development and calls for HEIs to develop explicit employability skills in both undergraduate and postgraduate programmes:

> Both undergraduate and taught postgraduate programmes should develop the generic skills needed for effective engagement in society and in the workplace. Undergraduate and postgraduate programmes should explicitly address the skills necessary (Hunt, 2011, 15).

There is no doubt that the development of creativity and innovation to service industry requirements is of great benefit to society as it improves immediate graduate employability and the ability to engage effectively without delay in the workplace. Yet, in academic circles in the UK, Ireland and the rest of Europe, an interpretation of the knowledge society creativity policy agenda has been widely criticised. In the UK, Peters (2009) suggests that education policy is the instrument manipulated to boost implementation of a knowledge economy without an epistemological or ethical discussion of valued goals (Peters, 2009). A production orientated higher education system relates to students as consumers and measures educational output in terms of efficiency, profit and marketability. Several academic writers across the EU, are critical of the polarised employability focused agendas in HE (Jackson, 2008; EurActiv, 2009; Peters, 2009; Robinson, 2011; Moutsios, 2013; Teichler, 2013). Irish academic, Kathleen Lynch posits that in the current model “Education becomes just another consumption good (not a human right) paralleling other goods” (Lynch, 2012, 96) and that “the focus is the product not the person, both in terms of what is attained and what is counted and countable” (Lynch, 2012, 98). However, publicly funded European HEIs (other than those in the UK), are strongly dependent on outcome focused state funding and, to justify funding allocations, benefits must be visible and quantifiable. Due to contemporary recessionary and budgetary control procedures, HEI governance focuses heavily on financial control, resource efficiencies and measurable outcomes (MacLaren, 2012; Moutsios, 2013). The benefits of creativity development are not readily quantified in this model.

Located in juxtaposition to the production orientated model for HE, stands the Humboldtian model of academic higher education (Humboldtisches Bildungsideal or Humboldtian education ideal). This philosophy of education is characterised by a holistic autonomous public-sector education ideal which cultivates mind and character and was championed by Wilhelm von Humboldt (1767-1835), a Prussian philosopher, diplomat and founder of the

University of Berlin. The Humboldtian educational ideal is informed by unbiased knowledge and analysis and is to be self-supporting, thus independent and unfettered by economic and state interests. Informed by a combination of research and teaching, the student would be permitted a free choice of study in this system. Though criticised for contributing to the emergence of an educational elite (Hofmann, 2014), this concept has greatly influenced the teaching philosophies of European universities for almost two centuries.

During strongly supported initial anti-Bologna protests in Germany, it was argued that the Bologna Process would dismantle the, (almost mythical), Humboldtian education ideal. The phrase “Humboldt was dead” was employed to represent the “lack [within the Bologna initiative] of a cultural code powerful enough to replace the Humboldtian educational ideal” (Ash, 2014, 89). It is argued that the Bologna process persists in its failure to articulate a philosophical vision or meaning for the contemporary higher education system “that goes beyond the logic of an economic or administrative reason” (Ash, 2014, 86). The Humboldt ideal of the pursuit of knowledge for knowledge’ sake and a research-informed educational system remains a:

> Symbol for research and teaching orientated towards aims that go beyond immediate financial gain or short-term social usefulness (Ash, 2014, 86).

In contrast to the Humboldt ideal, a misbalanced narrowly focused education agenda servicing first the employer and then the learner, may readily produce workers who fit easily into scientific management style workplaces, but who have not sufficiently exercised their abilities to adapt to complex dynamic working environments. Vocational learning programmes with a short-term focus on provision for immediate labour needs may quickly become out of date. These specific programmes pin workers to a specific skillset and disable flexibility to change. What is required are broad based programmes of learning which enable adaptability for the long term. To enable our academics to develop these programmes in a rapidly changing society, we must ensure our HEIs function as “learning organisations” (Senge, 1997) and develop climates for creativity and innovation in

expansive flexible learning organisations. Leaders of learning organisations play an important part in the development of creative climates in HEIs. According to Kandiko (2012), there is a need for creative leadership within the university in order to confront the challenges of the knowledge economy (Kandiko, 2012).

This thesis adopts a pluralist perspective in these broad philosophies (or absence of philosophies) of purpose for the development of creativity and innovation in HE, in line with a proposal by Wilhelm Krull. Krull, a long serving secretary general of the Volkswagen Corporation, responded to the Bologna protests in Germany by suggesting students not be considered as consumers but as co-producers of their own learning and knowledge, to be taken seriously and provided with a system of learning which adopts aspects from both interest groups. His belief is that it is:

> Not in an opposition, but in a collaboration of the Humboldtian ideal and the Bolognese pragmatism lies the future of an increasingly differentiated science system (Krull, 2009 cited in Ash, 2014, 91).

Amabile's (1983) definition of creative cognition is interpreted to be in alignment with this dual perspective. For her, creativity is located where self-governed intrinsic motivation and domain relevant knowledge, skills and abilities converge.

This chapter moves on now from the review of broader definitions and processes of creativity and innovation; educational policy aspirations and philosophical debates to a review of literature related to the more practical focus of supporting organisational creativity and innovation in HE. In the second half of this chapter, we uncover academics' experiences of increasingly restrictive quality control mechanisms inhibiting creativity in curriculum development and then, finding a noteworthy absence of research into the factors which have impact on academic creativity and innovation in HE climates, we turn to review the organisational creative climate models which were developed for commercial organisations. We begin with an exploration of the academic press in relation to the regulatory procedures on the ground which support and / or inhibit creativity and innovation.

2.5 Between creativity and constraint: ideals and controls

There is recognition at EU policy making level, that HE systems need to be more flexible and responsive to change. The EC policy agenda for the modernisation of Europe's HE systems contends that HE "curricula are often slow to respond to changing needs in the wider economy and fail to anticipate or help shape the careers of tomorrow" (European Commission, 2011, 4). A 2007 European University report also identified the need for greater structural flexibility in the HE sector. The report recommends that:

> Students and staff need to be provided with institutional structures and cultures that aim at balancing stability with flexibility. The human potential of the university should be provided with the safeguards necessary to encourage risk-taking. At the same time, students and staff should be prepared to contribute towards shaping future developments and be ready to address the insecurity and uncertainty this entails (European University Association, 2007, 9).

A response to the structural inflexibilities identified in EU policy, is the HEInnovate guiding framework developed by The Organisation for Economic Co-operation and Development (OECD) and the EC. This tool is aimed at assisting development of more entrepreneurial (a more holistic sense of entrepreneurship is promoted here) and innovative higher education institutions (Dimitrov and Hofer, 2014; European Commission, 2014). This on-line interactive tool permits HEIs to self-assess their entrepreneurial and innovative potential. This instrument is free to use and is a welcome initiative to encourage intercultural, multi-disciplinary systems innovation and improvement in HEIs across Europe. It is relatively new, but it is expected that, given the EC and OECD support for its diffusion, that the momentum it will generate will have a positive effect, initiating high-level dialogue around HEI structural flexibility to support innovation. Aside from this practical and proactive multi-national initiative to instigate HEI cultural change (Dimitrov and Hofer, 2014; European Commission, 2014), there is a marked deficit in studies and initiatives to examine and support HEI organisational climates for creativity and innovation. This deficit persists, despite the number of HE policy directives which promote the development of creativity and innovation in higher education (Expert group on future skills needs, 2016; European Commission, 2018b, 1).

The impetus towards flexible innovative structures is not being felt inside the institutes in Ireland at present. Flexible HE cultures which encourage risk-taking and academic and student creativity need space (Tait, 2002) and a certain degree of professional trust and freedom (Amabile, 1997). Yet academics are increasingly experiencing greater control, scrutiny and closer supervision from state governing bodies. Across Europe, contemporary academic discourse raises objections to an intensification of governmental controls in HE. A 2013 empirical study of lecturer labour changes in the UK observed “an intensification of supervision” from the state which is challenging “the basis of [the lecturer’s] professionalism” (Mather and Seifert, 2013, 11). While bureaucratic quality control principles constitute efficient mechanisms to regulate and monitor large complex organisations, the contemporary “relentless advance of new public management”, it is claimed (MacLaren, 2012, 160–168), creates a low trust environment, and an increasingly oppressive workplace (Mather and Seifert, 2013; Moutsios, 2013).

Reference in the literature is made to new public management (NPM) politics. NPM is the term employed to describe the shift in public sector governance towards efficiency and privatisation which began in the 1980s in the UK under Margaret Thatcher, making it more business-like. In Ireland, the UK and the U.S. and other countries, public sector clients became known as consumers, senior managers were given more power and public services were marketised. As a result of these changes, limitations on HE in the UK, for example, are placed in the form of resource constraints, dominant management discourses and space and time for decision-making (McGoldrick and Edwards, 2002). The Danish academic Moutsios echoes the Humboldtian ideal when he argues that state intervention in HE must be restricted as it detracts from the more holistic purpose of education which enables the development of “self-determined individuals” acting in freedom who are able to “draw on their own energy” (Moutsios, 2013, 26). Policies appear to pay lip service to the development of creativity (MacLaren, 2012), and it is claimed that increasing controls further limit academic freedom (Keeling, 2006; Mather and Seifert, 2013; Kallio *et al.*, 2015).

Criticism of EU level intervention in HE asserts that supra-state intervention by the European Higher Education Authority (EHEA) is "designed to dismantle academic autonomy across the continent" (Moutsios, 2013, 22). According to Moutsios, the EU is in the process of restructuring HE to create competing business units (Moutsios, 2013, 34). Administrative procedures increasingly occupy lecturers' time to the detriment of time spent on independent research and lecture preparation and delivery.

Similarly, in Ireland, HE strategy at state level, appears to contradict itself; policy documents "envision far greater levels of central control […] while repeatedly emphasising flexibility and autonomy" (MacLaren, 2012, 161–168). MacLaren (2012) provides an example of this control focused, low trust and insecure environment in Ireland. The example is manifest in the Irish government imposed ECF or Employment Control Framework[9] (Higher Education Authority, 2011) which, among other restrictive measures, effectively abolished tenure of new public-sector positions by filling posts on a fixed term contract basis and providing salaries at the lowest point of the pay scale. The policy was successful in part as a recessionary measure, however it has contributed to a "growing sense of insecurity, anxiety and demoralisation" among staff within academic environments (Courtois and O' Keefe, 2015, 49).

This review has provided examples documented by academics in Ireland, the UK and in the EU, of an increasing culture of control in HE. Academics perceive intensifying control measures as evidence of a lack of trust invested in them within their public sector organisational environments. (Later in a review of attributes of commercial creative climates, we will see that trust and freedom are important attributes of an organisational climate conducive to creativity and innovation). HE policy implementation mechanisms on the ground contradict HE policy ideals for a creative and innovation sector. Policy calls for greater creativity and innovation in academic environments yet simultaneous NPM practices are creating an academic environment

[9] Under the Irish National Recovery Plan 2011-2014 and the financial support plans agreed with the EU and the International Monetary Fund (IMF), this policy cut the public sector pay bill by reducing employee numbers and implementing other cost savings (Higher Education Authority, 2011).

which inhibits creative endeavour (Mather & Seifert 2013; Kallio et al. 2015; Moutsios 2013; MacLaren 2012).

This culture of control in HE, contrasts sharply with that of high trust enterprises which nurture employee creativity and innovation (Steiber and Alänge, 2012). The current HE climate does not appear to be a suitable fit for creativity and innovation to flourish. So what factors need to be in place for creativity and innovation to flourish in HE environments? The remainder of this chapter examines the literature of relevance to this question.

2.6 Assembling attributes of a climate supportive of creativity

In creativity research, the social or organisational environment encompassing structures, systems and interaction of individuals is referred to as the organisational climate. Climate is defined in this thesis as a conglomerate of attitudes, feelings, and behaviours (Ekvall, 1996), which continuously interact with and characterize life in the organizational setting (Amabile, 1988). *Creative flow* concept creator, Csikszentmihalyi, in his analogy of air and tinder (1997) introduced earlier, finds environmental factors in creative endeavour have significant impact. Ekvall (1983) also emphasises the influence of climate factors in the development of organisational creativity. He conducted several empirical research studies within commercial organisations in Scandinavian countries with the aim of uncovering factors which have impact on organisational creativity and innovation (C&I). Climate was found to be the most crucial of four organisational variables[10] in the measurement of creative environments (Ekvall, 1983). Likewise in Hunter, Bedell and Mumford's meta-analysis of 42 studies of the relationship between climatic dimensions and indices of creative performance, climate was found to be strongly related to creative achievement (Hunter, Bedell and Mumford, 2007).

The Higher Educational climate is a place of learning, development and much interdisciplinary and cultural interaction (Trahar and ESCalate, 2007).

[10] The four variables were: climate; bureaucratic aspects; organisational goal clarity and the professional level of staff.

If creativity arises from the synergy of many sources (Csikszentmihalyi 1997), then it follows that multi-disciplinary environments like those in HE might be regarded idyllic synergic locations for the advance of creative initiatives. However, earlier in this literature review we saw that many academics believe the contemporary higher educational climate is restrictive of academic engagement in creative endeavour. If the HE climate is restrictive, it is important to understand how to adapt the climate to enhance the support for C&I. Thus, an exploration of the academic press was undertaken to unearth the attributes of an organisational climate supportive of creativity and innovation.

Despite the wave of interest in the promotion of creativity and innovation in HE, there is a notable scarcity of research into the attributes of a climate for creativity in public sector HE organisations. Few research studies have been conducted to isolate the climate factors which have impact within non-commercial organisations. In Hunter and Bedell's (2007) meta-analysis of 42 research studies of the relationship between climate dimensions and creative endeavour, only one creative climate study was uncovered which assesses the creative climate of a HEI (Hunter, Bedell and Mumford, 2007). The only study I have uncovered in this review which comprehensively attempts to assess and measure creativity and innovation factors within a public sector HE Institution, was conducted by Goran Ekvall in 1996. A prolific creative climate researcher of commercial organisations, Ekvall employed his Creative Climate Questionnaire (CCQ) to assess the creative organizational and individual resources of a university in Sweden (Ekvall and Ryhammar, 1999). In this study, a sample of 130 educators rated their perceptions of creative and innovative achievements of their departments and completed individual creativity and personality testing. The principal finding was that climate and resources appear to exert the strongest influence on the creative outcome. In addition, they found that the role of leadership in the climate was important and the study highlights the importance of a creative climate in HEIs.

Judging one study insufficient for the purposes of this review, more detailed information was required to ascertain what factors were important, for organisational creativity and innovation to flourish in HE. Given the research

deficit uncovered within HE environments, I decided to review the available creative climate studies conducted in commercial environments. I also considered whether I should look for creative climate research or innovation climate research studies. However, there were few differences identified in the research studies between instruments employed to assess "work environments for innovation and work environments for creativity" (Mathisen and Einarsen, 2004, 136). Most referred to both creativity and innovation in their assessments.

Empirical research studies assessing creative climates have been extensively conducted within commercial organisational contexts. Several instruments have been employed to measure and explore commercial organisational climates for creativity. The most widely employed and documented instruments developed include: Amabile's KEYS (to C&I) also known as the Work Environment Inventory (WEI) instrument; Ekvall's (1996) Creative Climate Questionnaire (CCQ) and Anderson and West's Team Climate for Innovation (TCI) instrument. Other models have been developed to integrate creative climate taxonomies (Hunter, Bedell and Mumford, 2007; Sardari and Axelsson, 2011) but arguably the most widely validated models are The TCI and Amabile's KEYS model (Hunter, Bedell and Mumford, 2007). Each one of these instruments has identified factors which have significant impact on creativity in organisations, albeit in commercial, private sector organisations. Amabile's KEYs instrument identifies six factors which stimulate creativity (creativity stimulant scales) and two creativity obstacle scales. The CCQ identifies ten factors which have impact on organisational creativity and the TCI identifies four factors. Figure 2-1 below, highlights dimensions identified in the literature to have impact on organisational creativity and innovation (within commercial organisations). It provides a synopsis of the factors or attributes contributing and/or inhibiting organisational creativity and innovation, which have been identified by these three models (KEYS, TCI and CCQ).

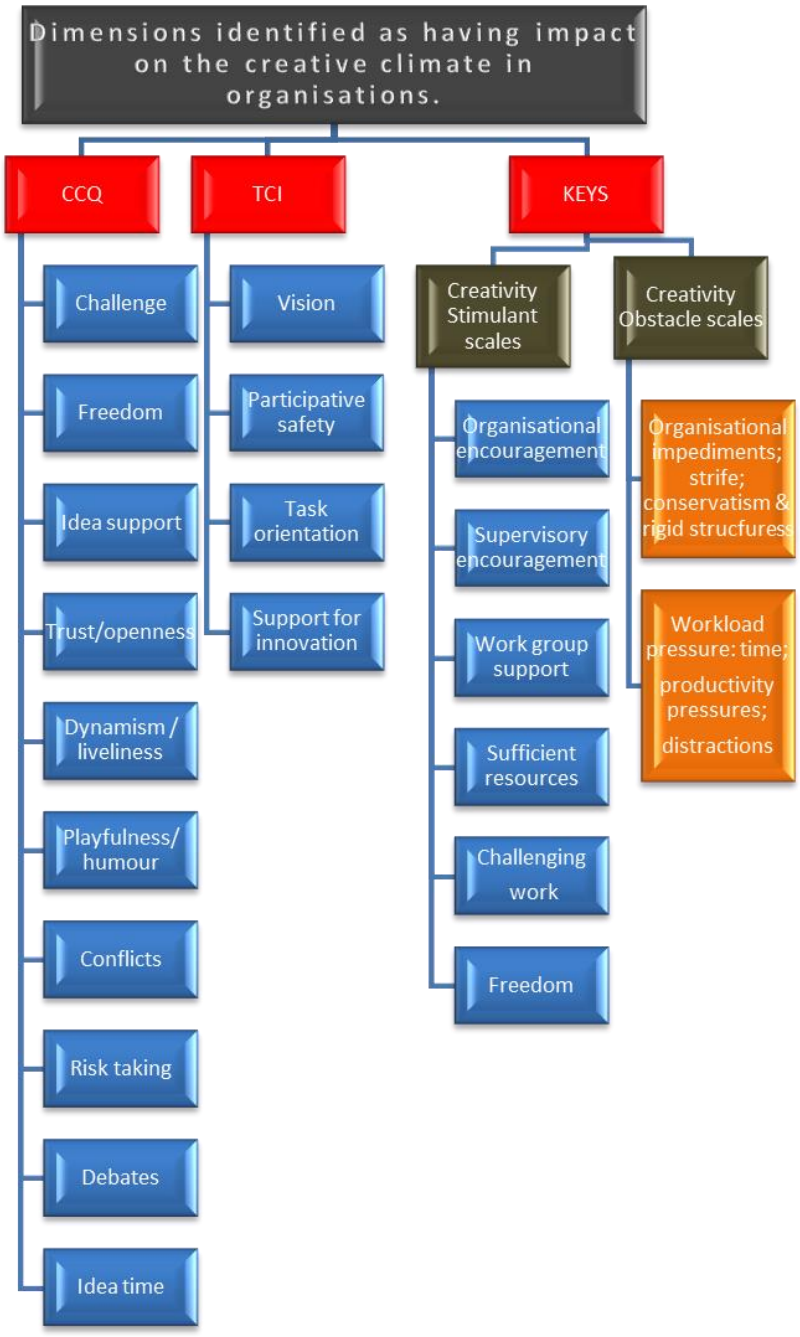


Figure 2-1 Dimensions identified to impact on (commercial) organisational creativity and innovation.

Concepts in the blue boxes in Figure 2-1, Dimensions identified in literature to have impact on organisational creativity and innovation (commercial organisations), above represent dimensions which promote organisational creativity. Concepts in the two orange boxes on the right represent factors which impede creativity in the organisation. More emphasis is placed on factors promoting creativity than on impeding factors. From a review of these concepts, it is apparent that organisations with a high degree of trust, freedom, support, challenge and participative safety (subjective perception

of support and acceptance for creative initiatives in a non-threatening, supportive environment) have climates more conducive to creativity and innovation. Conversely, those with a high degree of control, productivity pressures, strife, conservatism and structural and systemic bureaucracy are less inclined to encourage creative and innovative endeavour.

The relevance of these findings to HE organisations in Ireland is open to discussion, most of the studies were conducted in for-profit organisations, and thus further research needs to be conducted in HEIs to understand if the same attributes apply. Ekvall's CCQ instrument was developed and refined by carrying out interviews predominantly with engineers, R&D specialists, marketeers and technicians in the engineering and mechanical industries within multinational European organisations in the private sector (however, he did carry out the study in the Swedish university). Anderson and West might perhaps have identified the creative climate factors most pertinent to Irish HEIs as their TCI instrument was initially tested with data from the public sector in the UK.

Anderson and West's TCI four factor instrument was refined in a study measuring the climate for work group innovation within the public health sector in the UK. Anderson and West, psychology researchers from the Universities of London and Sheffield respectively, interviewed 155 managers from 27 hospital management teams in the UK, and tested the four factor TCI instrument. It was further tested in Sweden in multiple organisations. However, the four factors identified in this TCI instrument have also been included in Amabile's KEYs measurement instrument, in addition to other factors, thus the KEYS model provides more detail on the intricacies of organisational creative climates.

Amabile's organisational creativity and innovation measurement instrument, KEYs, which has gone through multiple design iterations, was initially tested within an electronics company in the U.S. with over 30,000 employees. In 1996, the KEYS instrument had an extensive database "of 12,525 cases" (Amabile *et al.*, 1996, 1164), from high technology; biotechnology; electronics; pharmaceutical; banking; manufacturing; R&D and the chemicals' industries. Widely employed, this instrument is principally used

in commercial environments to assess creative climates. Research to uncover the organisational attributes relevant to C&I in HEIs in Ireland and indeed in Europe is thin on the ground in comparison. Amabile's extensive KEYS research has led to the development of another model discussed later in this chapter, the componential model of organisational creativity and innovation.

Reflecting on the contextual relevance of the creative climate measures and the factors identified by them, I consider that the four factors of the TCI might be most relevant to inform the development of a creative climate in an Irish HEI: vision; participative safety; task orientation and support for innovation. However, as Teresa Amabile's KEYs instrument also incorporated the factors of the TCI and is the most extensively employed and widely validated model across multiple commercial organisational environments, I would also expect the factors identified by Amabile's research to apply to the Irish HE organisational climate. Amabile's research data is prolific, highly regarded, extensively peer reviewed and widely cited, her findings are considered relevant to multiple varieties of organisations. Thus, with a view to identifying the attributes of a creative climate in a HEI, Amabile's componential model, which is the most comprehensive model in creative climate studies, is outlined in the next section in this chapter.

2.7 Constructing a model of creativity and innovation.

Having already noted the absence of theoretical guiding framework for the analysis of HEI creative climate attributes, a wider literature search of commercial creative climate research, found Teresa Amabile's widely employed *Componential Model of Organisational Creativity and Innovation* to be comprehensive. This section explores Amabile's model, in an attempt to identify different sets of factors having impact on organisational creativity that might be applicable to Irish HEIs. Research question 3 (RQ3) emerged in part, from this section. RQ3 asks what dimensions of the broader HE climate hinder / foster academic creativity and innovation.

Amabile, director of business research at Harvard Business School, has published extensively on creativity since the 1970s. Amabile's (1988, 2012)

models of creativity and innovation in organisations place great importance on the process of individual creativity, seeing it as crucial within the process of organisational innovation (Amabile, 1988). Amabile developed the Componential Model of Organisational Creativity and Innovation to account for the skills and motivation of the individual and the importance of the social environment in the creativity and innovation process. This model provides a comprehensive account of the multi-level factors impacting on C&I that Amabile has drawn from her many studies.

The Componential theory of Organisational Creativity (1988), elucidates the stimulants and impediments to creativity which exist at different levels in an organisation, see Figure 2-2 below. The Componential Theory emphasises the process of individual creativity in the process of organizational innovation (Amabile, 1988). When originally introduced, no other “widely-cited theory had attempted to incorporate individual creativity into a model of organizational innovation” (Amabile & Pratt 2016, 2). The Componential Theory is important in creativity research as it is:

> Still the only widely-cited theory to attempt a comprehensive description of both the process of individual creativity and the process of organizational innovation, as well as the ways in which the two are linked through mutual influence. As noted by others, theoretical advances in this realm have been sparse in recent years (Amabile and Pratt, 2016, 158).

In this theory, the skills and motivation of the individual and the importance of the social environment (albeit inside the organisation) in the creativity and innovation process are accentuated. The theory assumes a high-level of isomorphism between the requirements for individual creativity and those required for organisational innovation. Four components are cited as necessary for creative response: Three within individuals, “domain relevant skills, creativity-relevant processes, and intrinsic task motivation” (Amabile, 2012, 7) and one outside the individual, “the social environment in which the individual is working” (Amabile, 2012, 7). The Componential Theory of Organisational Creativity acknowledges the interactive impact of the environment on the individual, and specifically on the individual’s intrinsic motivation to engage in the creative process. The organisational work environment is seen to have a strong impact on the individual’s intrinsic

motivation. Amabile's componential model encompasses "creativity in single individuals, teams, and entire organizations" (Amabile, 2012, 7).

The Componential Theory is represented in Figure 2-2 below. Venn diagrams on the bottom of the diagram illustrate the three factors which impact on the creativity motivation of the individual and of the team. These factors include individual/team task motivation; creativity relevant processes and domain relevant skills or expertise. These factors, according to Amabile's research studies, constitute the basic individual/team level factors relevant to creativity (Amabile, 1988). The insights offered by this model into individual/team and organisational level creative climate attributes had appeal in this review. In fact, these insights became much more important in this study later, following the conduct of the empirical research in this inquiry, given that they were found to coincide strongly with emerging findings.

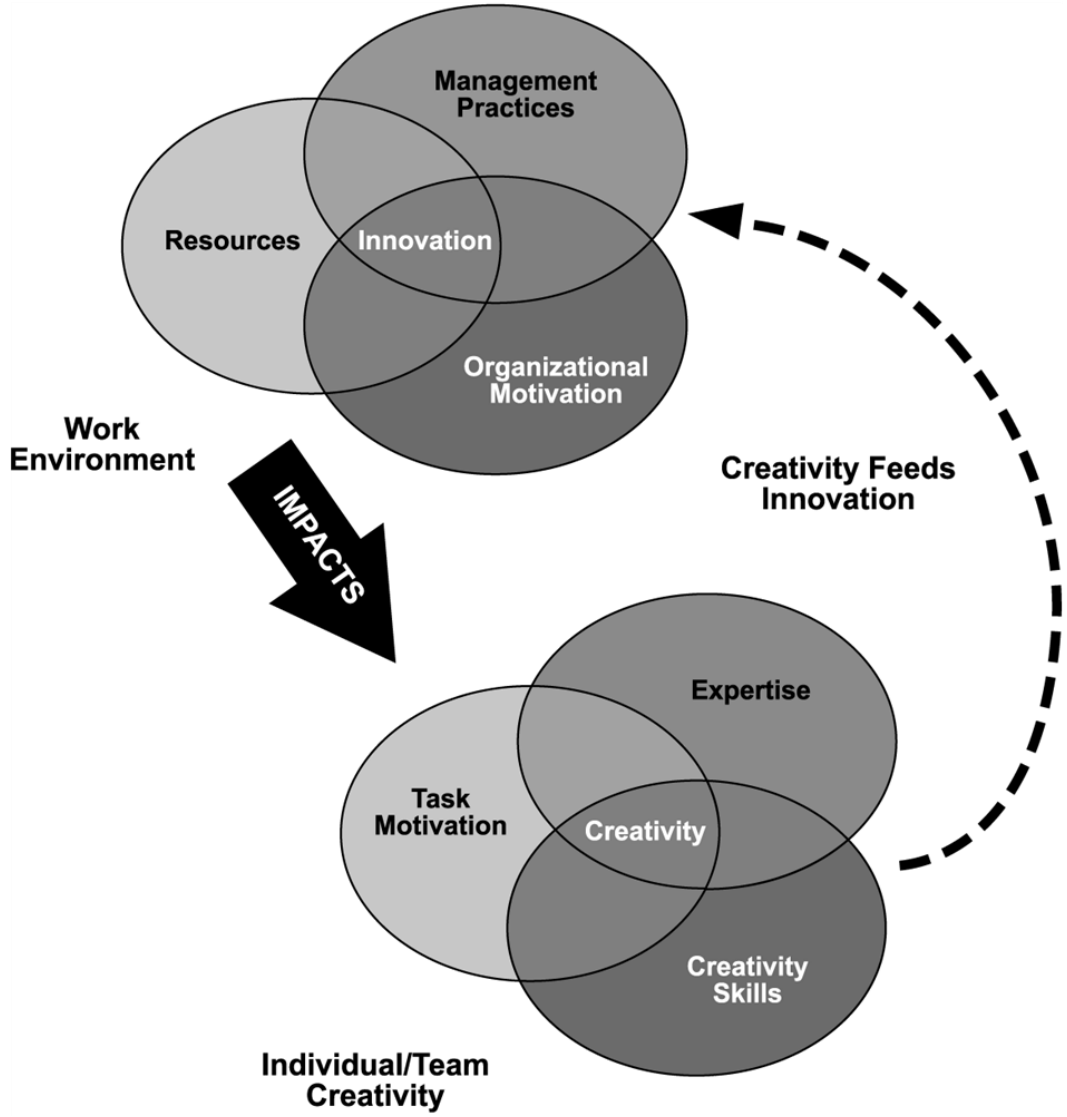


Figure 2-2 Componential theory of organisational creativity and innovation (Amabile, 1988).

The model illustrated in Figure 2-2 above is explained as follows: The internal organisational environment which provides the canvas for the transformation of creative initiatives of individuals and teams into innovation, is represented by the Venn diagrams to the top of the diagram. The internal organisational processes which support or inhibit creativity and innovation are shown as: management practices, organisational motivation (to innovate) and resources (available for innovation). It is important to note that innovation follows creativity in the diagram. Thus, the organisational innovation process is triggered by creativity at individual or team level. Though creativity comes first, the diagram also shows that the availability or scarcity of organisational innovation factors reflects heavily, in return, on the

creativity of individuals and teams. The individual and organisational dimensions are further explicated in Table 2-1 below.

Amabile's componential theory of organisational creativity: factors relevant to organisational creativity.		
Level	Attribute	Examples
Individual /Team	Domain relevant skills (Specialism and knowledge)	Knowledge, specialised skills, technical skills & expertise
	Creativity – relevant processes (personal traits and cognitive style)	Cognitive style receptive to tackling the new; open ended exploration; Energetic pursuit of work. Flexible personality traits.
	Intrinsic task motivation (initiating & sustaining the process)	Self-motivation & task. Task motivation seems influenced strongly by work environment.
Organisation	Organisational motivation to innovate	Innovation orientated vision, mission & strategy from CEO; management support; risk & future orientated leadership; innovation valued & enthused.
	Resources in task domain	Material & expertise resources; availability of training & financial resources
	Management practices	Skills in innovation management; scheduling; freedom & restraint balance; Goalsetting tight at vision level but loose in procedural formality.

Table 2-1 Componential theory of organisational creativity and innovation.

The Componential Theory was revised in 2016: The Dynamic Componential Model of Creativity and Innovation in Organisations (Amabile and Pratt, 2016) is a more complex and detailed evolution of the theory. The revised model, grounded in the discipline of organisational psychology, is influenced, principally by four discoveries in creativity research. The first discovery coincides with the cyclical nature of the final innovation process model reviewed earlier in this chapter in section 2.2. First, creativity is viewed as a cyclical and more dynamic process, a premise based on the discovery that work progress constitutes a major determinant of psychological states facilitating creative behaviour. Second, the suggestion that meaningful work plays a critical role in the creative process. Third, the

importance of emotions in creativity has been highlighted in research since 1988 and thus an affective element was added to the model. Finally, the revised model revisited the 1988 version of the model's basic premise which placed an almost exclusive focus on intrinsic motivation facilitating creativity. This resulted in greater insights into extrinsic motivation being incorporated into the model (Amabile and Pratt, 2016). The revised model has also incorporated progress feedback loops showing that progress can still occur even after a failed creativity attempt, "if the work environment is psychologically safe" (Amabile & Pratt 2016, 2). Organisational behavioural dimensions added to the revised model go into further detail (than the 1988 version) to elucidate complexities of individual and team creative behaviours. The 2016 revised model focuses more heavily on psychological behavioural complexities and is more diagrammatically complex than the older model. For further detail on the revised model see Appendix 1.

The componential models represent factors at multiple levels, "encompassing creativity in single individuals, teams, and entire organizations" (Amabile, 2012, 7). However, there is a drawback in both the original and the revised componential theory. These models applied to organisations, fail:

> To include outside forces, such as consumer preferences and economic fluctuations [and this] limits the comprehensiveness of the theory (Amabile, 2012,. 9).

It also does not consider in detail the "influence of the [external] physical environment on creativity" within the organisation (Amabile, 2012, 9). Despite this shortcoming, which is significant, given the pace of change in the contemporary political and technological environment and given the number of factors we have just examined impacting on Irish HEIs in this study, Amabile's model is the most comprehensive in the literature. Later, in Chapter five, we relate the research findings to this model, and use it to build a new *Three level model of organisational creativity and innovation* tailored to Irish HEIs.

Having considered the attributes of organisational C&I in the literature, I wanted to uncover what had been written about academic creativity and innovation in practice, in the HEI context. To investigate this in greater detail,

the creative process of New Programme Development and Validation (NPDV) was selected. The next section explains what has been written about creativity and innovation within this process in the academic press and why this curriculum development process was selected for examination.

2.8 Where creativity meets constraint: NPDV

New programme development is a potential playing field for academic creativity. Keeping abreast of scientific, technological and societal developments, academics create new programmes of learning and enhance older programmes, ensuring that they remain relevant. The New Programme Development and Validation process (NPDV) was selected for in-depth examination in this study, as within it, academics can exercise their creative abilities. An examination of this process is expected to provide a greater insight into the extent to which, in practice, the contemporary HE climate is supportive of academic creativity and innovation. By digging deeper into the regulatory policies and pertinent academic papers, we can observe how academic creativity and innovation is provided for, within one academic area of responsibility.

In this research context, the phrase, New Programme Development and Validation (NPDV) is understood to include all aspects related to new programme ideation, design, development and the establishment of internal and external approval, programme legitimacy and certification for student intake. The term NPDV is specific to this thesis as the nomenclature employed in common practice in this Irish HEI context, is “programme validation process”, a term which puts emphasis on the approval stage of programme development and ignores the prior creative ideation and development stage. Nomenclature for validation across the EU varies, and includes certification, audit, validation and recognition (Grifoll, Hopbach & Kekalainen, 2012). Saarinen et al. (2007), claim that the meaning of the term “accreditation” has become vague across the EHEA, as Bologna Process participants’ policy actions vary across countries, thus how it is defined is altered across nations (Saarinen and Ala-Vahala, 2007). In this thesis, the terms accreditation and validation are interchangeably employed to refer to

the same final stage of the NPDV process, that of certifying and approving programmes of study.

UK academic Harvey (2004) defines programme accreditation as "the establishment or restatement of the status, legitimacy or appropriateness of [..] a programme of study" (Harvey, 2004, 208). The Australian Department of Education, Training and Youth Affairs, define accreditation as "a process of assessment and review which enables a higher education course […] to be recognised or certified as meeting appropriate standards" (Harman and Meek, 2000, vi). In HE European standards and guidelines for quality assurance, reference is made to several overarching preordained objectives which the new programme must meet:

> Institutions should have processes for the design and approval of their programmes. The programmes should be designed so that they meet the objectives set for them, including the intended learning outcomes.[11] The qualification resulting from a programme should be clearly specified and communicated, and refer to the correct level of the national qualifications framework for higher education and, consequently, to the Framework for Qualifications of the European Higher Education Area. (European Association for Quality Assurance in Higher Education (ENQA) 2015, 25).

NPDV is regulated by quality assurance standards or principles of standardisation and conformity, which apply in HE institutions to ensure that all students are fairly assessed against common standards and scales. These are based on periodically reviewed learning outcomes and specified learning content and methodologies. In effect, generic learning outcomes are now prescribed at EU level for each discipline (GHK consulting, 2011). The Irish national authority for the validation of programmes, Quality and Qualifications Ireland (QQI), keeps in line with European standards. Validation is defined by QQI as an external quality assurance procedure consistent with standards and guidelines of quality assurance in the European higher education area (QQI, 2013).

Quality processes have the potential to strengthen creativity and innovation if geared towards enhancement and focused on capacity to change,

[11] Learning outcomes are "concise, measurable statements of what a graduate should know, be able to do, or how to behave as a result of the course work and educational experience" (Benson and Dresdow, 2014, 457).

however they are seen to have highly detrimental effects if they "stress conformity over risk-taking and are orientated towards the past rather than the future and develop into burdensome bureaucracies" (EUA, 2007, 10). In effect, Quality Assurance (QA) systems have significant impact on the HE climate for creativity. QA systems regulate the HE environment, and thus provide a valuable framework for the academic working environment. Both positive and negative consequences of HEI controls have been generated by increasingly homogenised quality assurance mechanisms across the EU (European QA procedures). It is claimed that these mechanisms place increasing emphasis on external scrutiny and, according to Moutsios (2013), restrict academic autonomy (the harmonisation of HE quality standards across the EU is driven by The Bologna Process reviewed earlier).

The control culture, which is becoming more evident in HEIs in Ireland, appears to be having a significant impact on academic creativity and innovation in NPDV in the UK, according to Harvey (2004) who claims accreditation processes "impose an extensive bureaucratic burden"; "impinge on academic freedom", are "a mechanism of control" and "restrain innovation". He claims increasing QA controls "represent a shift of power from educators to bureaucrats" (Harvey, 2004, 207–222). Further, making specific reference to initiatives by the European Commission to synchronize accreditation policies, Harvey cautions against "the surface legitimations of European unity and consumerist rhetoric" urging us to dig beneath these to "reveal the power processes and the ideology that legitimate the control function of accreditation" (Harvey, 2004, 222). The Irish QA system is more closely aligned to the European QA system than is the UK QA system. The ability of HEI academics to be creative and innovative in this changing culture merits further investigation.

Thus, we can see that HEI quality systems governing NPDV are increasingly heavily regulated, structured and planned. Yet creative curriculum development can involve risk, is often experimental and may not readily provide quantifiable benefits in the short term. Within the creative process, failures are inevitable and returns are difficult to articulate (Smith-Bingham, 2007). Creativity is "often unpredictable, unmanageable and unquantifiable" (Smith-Bingham, 2007, 14). Excessive controls may stifle creative impulse.

While the adverse impact on academic creativity of the changing culture of control in HEIs raises concerns, the beneficial aspects of quality assurance mechanisms, standards and centralised control in HEIs are acknowledged. Creativity also needs structure, and QA systems provide a structure upon which new programmes of learning can be scaffolded. Harmonised quality assurance and accreditation policies circumvent uncertainty, serve public accountability purposes and endeavour to ensure credibility, improvement and renewal of HE institutes and programmes of study (Harman and Meek, 2000). These characteristics can also favour the development of academic creativity and innovation in programme development by providing a supporting structure or scaffold on which to build and develop.

Further benefits of quality assured accreditation policies according to a ENQA survey (2012) include: Improved public information about HE programmes; improved connections between social interests and HE outcomes (principally employer and public authority interests) and improvements in the international recognition of qualifications and improvements in teaching and learning (Grifoll *et al.*, 2012). The ENQA also claim that reforms in ESG standards have contributed to a European HE "paradigm shift towards student-centred learning and teaching" (ENQA, 2015a). Indeed, formal QA and accreditation procedures can encourage a very effective, generalised, impersonal and rational approach to HE institution management. Yet it is of note that contemporary accounts of the benefits of increasingly standardised and harmonised accreditation processes found in this review, were restricted to government and EC sponsored publications (Harman and Meek, 2000; Grifoll *et al.*, 2012; ENQA, 2015a). New programmes of learning in Irish HE must conform to the National Framework of Qualifications (NFQ) which is in line with the European Framework of Qualifications (EFQ) and these frameworks subscribe to the sets of prescribed programme learning outcomes for each disciplinary area. Rigid structures and conservatism can inhibit organisational creativity and innovation (Amabile, 1988). Bureaucratic control can hamper organisational climates for creativity. Romero (2012) sees bureaucracy as the opposite of flexibility when it comes to making

decisions in a dynamic, competitive environment. He claims that, for creative activity, flexibility and risk-taking are required (Romero, 2012).

Earlier in this review we identified factors such as openness, freedom and innovation support as important features of organisational climates which foster creativity. The increasing move towards homogenisation of quality control procedures across Europe might effectively have the effect of inhibiting creativity and innovation at local level in curriculum development. However, there are further concerns evident in the literature, in relation to the harmonisation of standards which regulate programme development across Europe. Of concern to many academics is the increasing excessive influence of industry in the formulation of regulations around standards relating to the design of new programmes of learning. HE policy is very attentive to industry demands and this focus is evident from the significant presence of industry representation in the formulation of HE policies. A review of the stakeholder composition of the 2015 European Standards and Guidelines for Quality Assurance policy for HEIs demonstrates the extent of this presence in policy formulation. This policy which will direct higher education institutions' standards across Europe was prepared by the:

> European Council for Quality Assurance in Higher Education (ENQA) in cooperation with the European Association of Institutions in Higher Education (EURASHE); The European Students Union (ESU); the European University Association (EUA), in cooperation with Education International; the European Quality Assurance Register (EQAR) and BUSINESSEUROPE (sic). (European Association for Quality Assurance in Higher Education (ENQA, 2015, 5).

What is interesting to note is not the inclusion of BUSINESSEUROPE in the consultation process and preparation of the standards which will regulate the curriculum development process Europe-wide, but what causes more concern is the exclusion of other stakeholders, representative of social lobby groups such as, to take one example, the not for profit organisation CEDAG.[12] The lack of pluralist influence on the formulation of standards to regulate programmes of learning in Europe is disturbing.

[12] CEDAG is the European Council for Non-Profit Organisations. This organisation represents citizens across Europe across areas such as: care of the elderly, environmental protection, cultural activities, consumer protection, health, tourism, anti-discrimination, sport and youth (*CEDAG in a nutshell*, 2010).

We turn now in this literature review, to studies documenting the experiences of academics in HE curriculum development.

2.9 Academics' experiences of creativity in NPDV

This review found research studies into HE curriculum development in-house support processes to be limited in the UK and Ireland. Though there are recent developments in collaborative workshops run for academics by Oxford Brookes University (Dempster, Benfield and Francis, 2012), older curriculum development support studies uncovered in this review, tended to concentrate on imagining new ideas for creative programme design (Jackson and Shaw, 2005) and documenting academics' definitions of creativity and innovation in curriculum design (McGoldrick and Edwards, 2002). In Ireland, one brief report was found documenting an initiative to support NPDV in an Irish IOT (Donnelly, 2004). Donnelly[13] explains creativity in programme design as "putting things that are already together in a different way by being generative, innovative, expressive and imaginative" (Donnelly, 2004, 156). Boulos (2013), in a doctoral study conducted in an Irish university, concluded that "constraints stifling academics' creative teaching are more imagined than real", that they are products of the "social imaginary" of disciplinary communities (Boulos, 2013 187-189), however the link to the empirical data supporting this statement was difficult to determine. Her thesis, a *Conceptualisation of constraints on creativity in teaching in higher education* focused on the "difficulties of attempting to capture academics' creativity in teaching" (Boulos, 2013 3). Given that creativity is defined by disciplinary gatekeepers, according to its application in context (Csikszentmihalyi, 1991), it is not surprising that Boulos' study found no consensus in terms of a common definition of creativity among the academics from various disciplinary backgrounds in one of her study samples. These varied definitions and examples of creativity are not documented in her study.

[13] Donnelly's paper documents a learning and teaching support initiative for Irish IOT lecturers in curriculum development.

The imaginative curriculum project[14] at the Learning and Teaching Support Network in the UK (LTSN) funded McGoldrick's study exploring academics' perceptions of creativity in curriculum design and student learning, and another similar report conducted in the UK by Oliver (2002). They found four main features of curriculum creativity (the creativity quartet): existing knowledge; enthusiasm for the discipline; an interest in students and their learning; and "an issue" [to work on]. In addition, an imaginative spark "was felt usually to proceed the conscious logical working through of ideas" for programme design (McGoldrick and Edwards, 2002, 11). In Oliver's (2002) report on the same theme, academics explained creative programme design as breaking with tradition and producing something that engages students. The concept of a practical and experimental lived curriculum was mentioned and explained as an example. In a paper by UK academic Paul Kleiman, multidisciplinary university lecturers conceptualise creativity in relation to their pedagogic practice. His respondents believe creative practice in academia is very much about "personal fulfilment and escaping from, or at least resisting the constraints of daily academic life" (Kleiman, 2008, 216). In all the UK research studies reviewed for this thesis, respondents believed that creativity in academic institutions should be encouraged as it was seen as essential for "enriching individual lives and the wider society in which the University is embedded" (McGoldrick and Edwards, 2002, 20).

The LTSN reports uncovered challenges associated with implementing creative initiatives in programme development in practice. They found creativity in programme development to be hindered by limited resources and managerialist influences. Limited resources described by McGoldrick (McGoldrick and Edwards, 2002) included insufficient academic staff; loading of administrative tasks with no administrative support; limited technical supports; poor lecture room accommodation and resources and limited funding for staff development. Managerialist influences included unreasonably heavy accountability demands and lack of appreciation for deep learning in favour of market-led surface-level learning, in addition to

[14] Imaginative curriculum project – a systematic network-based collaborative learning project established in the UK to systematically address the issue of creativity in Higher Education.

limitations on professional autonomy including the freedom to design curricula. Academics noted the obligation to design to established norms rather than from first principles. Academics believe that there is less freedom to redesign inherited courses than those the academics created themselves (Oliver, 2002). Furthermore, leadership direction was seen as a very important support to creative curriculum development in the LTSN studies (McGoldrick and Edwards, 2002; Oliver, 2002).

According to these studies, effective academic management and leadership for creativity involves knowing your team and giving them space, supporting staff development, participating in problem-solving with empathy, applying formal decision-making processes and acknowledging team members' strengths in addition to having an ability to listen effectively (McGoldrick and Edwards, 2002). Trust was a recurrent theme in Oliver's (2002) research, articulated by the academics' need for creative space and freedom to permit curricula flexibility and experimentation.

In our earlier review of commercial creative climate assessment models in section 2.6, freedom, participative safety and innovation support were among the requisite dimensions of a creative environment. Add to these factors, the LTDN studies' recognition of the value of leadership support and an environment which cultivates trust, active listening and formal decision-making procedures. These are all recognised dimensions which were claimed in the academic press to foster a creative and innovative HE environment for academic practice.

Innovation process support is another important attribute of a creative organisational climate. We saw earlier in the section 2.2 review of several innovation process models that in commercial environments, significant attention is paid to innovation support. Although HE curriculum process innovation design support is not documented to the same extent as commercial innovation support in the academic press, there are some HE developments in e-learning curriculum development process support in the UK. For example, the "academic development (…) three-day workshop programme called a Course Design Intensive (CDI)" run by Oxford Brookes University" and the Carpe Diem workshops in Leicester University are run

to support staff collaborate for e-learning curriculum design (Armellini and Jones, 2008; Dempster, Benfield and Francis, 2012). These workshops foster a collaborative approach to ideation and design of new programmes of learning. However, in this review, only one comprehensive innovation in-house process support system provided at iterative intervals to academics as required, was uncovered to support the NPDV innovation process in a HE environment. The next section provides an overview of this NPDV process support process found in the University of Guelph, Canada.

2.10 Provision of support for the NPDV process

Academics within the IOTs, the study context of this thesis, are supported by the teaching and learning centres of their institutes. The bigger the institute, the more academic support it can provide. For example the teaching and learning centre in one of the larger Irish Institutes of Technology (anonymised), supports academics in their practice and provides programmes of learning for academics with a postgraduate certificate award in third level learning and teaching (Donnelly, 2004). I found a paucity of evidence in the literature of documented provision of specific process supports for NPDV in Ireland. I found one action research paper with limited recommendations documenting programme development initiatives (Donnelly, 2004) and no further research conducted in Ireland comprehensively examining the needs and training requirements of academics involved in the process of bringing through a creative new programme development. The next section provides an overview of a model developed to support academics in this process in Canada.

An innovation process model for curriculum design which comprehensively documents the provision of explicitly focused programme development support to academics at timely intervals was found in Canada, at Guelph University. Wolf (2007) developed the Curriculum Development Process Model, depicting curriculum development as an iterative process comprising three phases, including curriculum visioning; curriculum development and finally, alignment, coordination and development. He describes new programme development as a continuous improvement process that

generally takes up to one year. The curriculum visioning phase involves curriculum assessment, swot analysis development and consultancy. All of the stakeholders, “including faculty, staff, students; employers, graduates and the community and so on (sic)” (Wolf, 2007, 18) are consulted. Programme objectives are developed, and the ideal graduate attributes are articulated. The foundational content of the programme is established, and desirable education experiences are described. The second phase in his model, curriculum development, is when mapping takes place. The foundational content is matched to current and future courses; programme objectives and structure are strategically mapped, developed and reviewed. In the alignment, coordination and development phase, programme and course objectives are aligned with the programme content and course learning experiences. This process is iterative and once the final of the three phases is finished, program developers begin re-visioning, then revising the curriculum.

At the University of Guelph, there are educational retreats facilitated by educational developers to assist academics in examining or re-examining programme objectives and to develop new programmes. They believe their approach works because it “provides enough instructional design expertise on a just-in-time basis for faculty to develop their own capacity to move to the next level of curriculum and course alignment in a context of complexity” (Wolf, 2007, 15–20). This structured just-in-time support recognises process complexity and mirrors the timeliness, sequential support and interaction characteristics of the commercial innovation models reviewed earlier in section 2.2. Wolf’s intention was to “make explicit the links between student perceptions, student learning and assessment approaches, faculty goals for student and for the programme, alumni success, employer and society needs” (Wolf, 2007, 15–20). The Guelph University innovation support process values, encourages and nurtures the creativity of academics and acknowledges the complexities involved in developing a new programme of study. Moreover, there appears to be a balanced approach to programme objectives for student, employer and society. Guelph University understands the need for timely support for academics throughout the NPDV process as their NPDV innovation support process assists academics to navigate the

complex regulatory procedures of NPDV. It must be acknowledged however, that the Canadian HE system is not subject to the EU HE harmonisation drivers which influence the Irish system.

This review has identified a paucity of research in the academic press, into the attributes of a climate for creativity and innovation in higher education organisations. Furthermore, it has identified the absence of a theoretical framework to illustrate the factors which have impact on academic creativity and innovation in HEIs. There are limited publications in Ireland reviewing the process of new programme development or curriculum development. Given the heightened political and academic agendas and interests outlined in the promotion of creativity and innovation examined in section 2.4, this study set out to address these research deficits in an Irish context.

2.11 Surfacing research questions

The literature presented UK academics' definitions and perceptions of creativity in professional practice. Perceived in these studies as generally beneficial in HEIs, creativity is "essential for enriching individual lives and the wider society" (McGoldrick and Edwards, 2002, 20), and "very much about personal achievement" (Kleiman, 2008). Having found a paucity of research into academics' definitions and values related to creativity and innovation in Irish HEIs, the following question was developed to address this deficit in the literature:

> *RQ1: How do Irish Institutes of Technology academics define and value creativity and innovation within their professional practice in generic terms?*

The body of knowledge reviewed in this chapter highlighted an opportunity for academics to be creative within the NPDV process. McGoldrick and Edwards (2002) found that academics needed creative space and freedom to permit curricula flexibility and experimentation within creative programme design and that curriculum design was creative in its own right (McGoldrick and Edwards, 2002). The creativity in this curriculum development process is constrained and supported by regulatory process controls and Harvey (2004) is heavily critical of these controls, which "impose an extensive

bureaucratic burden"; "impinge on academic freedom", and "restrain innovation" (Harvey, 2004, 207–222). At the nexus of creativity and constraint, this process became the observation lens in this study to assess the provision for academic creativity and innovation in the HEIs examined. As a result, the following question was developed:

> *RQ2: How is academic creativity and innovation supported in practice by the new programme development and validation process (NPDV) in Irish IOTs?*

This literature review located the Irish HEI within a complex environment and presented the significant number of influences exerted on institute internal control mechanisms by EU regulatory protocols and high level political and economic objectives. In addition, the body of knowledge reviewed in this chapter, illustrated the attributes of innovation process models; creative commercial environments and those gathered by organisational creativity researchers in Europe and the United States (Ekvall, 1997; Anderson and West, 1998; Ekvall and Ryhammar, 1999; Amabile and Pratt, 2016). No comprehensive theoretical framework optimising the dimensions of a HEI climate for academic creativity and innovation was found. Thus, the following question emerged from this gap in the literature:

> *RQ3 What dimensions of the broader HE climate hinder / foster academic creativity and innovation?*

2.12 Summary of literature review

This literature review found support for the perspective that creativity is ubiquitous, beneficial in the HE context and a quality which can be developed. However, high level agendas for creativity and innovation promotion in HE pursue different objectives. In the literature, several EU academics criticise the polarised employability focus of some EU policies for HE, claiming creativity and innovation in HE have become economic tools "of a neo-liberalist society" (Harvey, 2004; Peters, 2009; Moutsios, 2013), producing workplace-ready graduates limited in their abilities to adapt to complex dynamic workplaces. In juxtaposition, the Humboldtian education ideal was presented as an alternative philosophical approach which might be adjusted for contemporary HEIs.

Cognisant of the benefits of creativity to economic development and some of the positive aspects of the EU Bolognese pragmatic approach to HE, a more pluralist and balanced vision for HE in Europe is proposed by Wilhelm Krull (Ash, 2014). The alliance of both the employability strategic perspective and the Humboldtian philosophical ideal for HE, he argues, would lead to a broader more creativity-responsive focus in academic circles, unleashing creativity talent.

HE policies may promote creativity in policy but in practice, academics experience HEI cultures as restrictive. Much criticism was levelled at the tension between creativity related policy ideals and policy implementation. HE policy demands innovative capabilities yet academics have become subject to greater academic workloads and sector rationalisation (McGoldrick and Edwards, 2002; DJEI, 2008; PSA, 2010). While policies promote HE creativity and innovation, academic freedom is restricted, engendering a creativity paradox. When the macroclimate becomes restrictive, space for creative activity becomes more limited.

Uncovering a deficiency in the academic press with respect to HE creative climate research, attributes of organisational creative climate were explored in a review of innovation process models and creative climate research instruments in commercial organisational contexts. Amabile's widely-cited Componential Model of Organisational Creativity and Innovation was found to be the most comprehensive, albeit it is limited to factors at individual / team and organisational level. Detailed reference to the influence of the external environment on creativity inside the organisation is omitted. Trust, participative safety, openness, leadership direction and support were among factors found to impact positively on organisational climates conducive to creativity and innovation.

The NPDV process was selected for closer examination as it provides an opportunity for academics to exercise their creativity, yet it is often within this practice that bureaucracy and creative development collide. Academics criticise accreditation mechanisms increasingly aligned with EU employability strategies for curriculum development (Harvey, 2004) and limiting of academic creative freedom. Though some workshops to support

curriculum development were found in Ireland and the UK and a detailed NPDV support system located in a Canadian University was reviewed, no comprehensive study assessing the provision for academic creativity and innovation in the NPDV process was found in the literature. To address the gaps uncovered in the literature, this study set out to develop a theoretical framework which would elucidate the attributes of a HE climate conducive to academic creativity and innovation in Irish IOTs, via the lens of the NPDV process.

3 Methodology

3.1 Introduction

This qualitative Constructivist Grounded Theory Case Study examines the experiences of 20 academics in 4 Irish Institutes of Technology and 1 University to achieve a greater understanding of the provision for academic creativity and innovation in HE professional practice and to uncover the factors which, in the academics' experience, have impact on academic creativity and innovation within Irish HEIs and within Institutes of Technology (IOTs) in particular. Semi-structured interviews and institutional documentary analysis were the instruments employed and the New Programme Development and Validation process (NPDV) was the academic creative practice chosen for closer examination in this study. This investigation addresses a deficit identified in the literature review in relation to the attributes of HEI organisational climates conducive to creativity and innovation. In addition, it addresses a further gap in the literature in relation to the comprehensive analysis of academic support requirements for Irish academics within the creative academic process of NPDV.

This chapter begins with a detailed description of the personal, social and ethical location of this study. An explanation as to how the methodological design choices were shaped by the nature and context of the study follows, then the sampling strategy; data preservation and analysis process are described, followed by an overview of the theory generation process. The final section in the chapter relates to the trustworthiness of research data and the credibility of this research study.

3.2 Ethics, researcher positionality and philosophical orientations

An insider or an outsider

My role as researcher is interpreted as that of actively engaged listener, accurately documenting the contextualised experiences of research participants, yet at once remaining conscious of how personal preconceptions, experiences and biases might influence understanding.

Employed 18 years as an academic within one of the institutes under investigation, I had experienced challenges within the creative process of NPDV. Institutional barriers to creativity and innovation were encountered, bureaucratic administrative structures often inhibited progression through the stages of the process. Onerous, continuously changing, resource-rationalisation and quality control protocols had to be negotiated, yet little training, support or orientation for academics was provided to facilitate process navigation.

My role as a lecturer and my experiences within the educational context under research have the potential to influence my interpretation of the data, perhaps leading to a restricted analytical perspective, this had to considered in the research design of this study. Whether the researcher is or is not a member of the group or function being studied is relevant in qualitative methodology, as the researcher plays an intimate role in both data collection and analysis. When the researcher is an insider, sharing experiences under study with research participants, this design characteristic is omnipresent in the study (Dwyer and Buckle, 2009).

However, I do not position myself entirely as an insider researcher, having been involved in the commercial world before my academic career. I regularly shift to an outsider's perspective approaching my lecturing work and my research from an entrepreneurial frame. I had been an entrepreneur at 21, marketing, recruiting and managing a rapidly growing language academy in Spain, returning to Ireland to obtain a languages degree and an MBA. I then became an executive director of a high growth wholesale business, managing the functional areas of retail; purchasing; credit control; customer relations; marketing and wholesale. Moving from the entrepreneurial private sector to a public sector educational institution presented me with many challenges. At times it felt as if I were restrained in a bureaucratic iron cage of sector mechanisation and red tape (DiMaggio and Powell, 1983). However, my entrepreneurial impetus has been tempered by 19 years as a socially conscious academic on a peripherally located HE campus in a region where, relative to the Irish capital, resources are diminishing. During this period, I have had the privilege of participating in and observing the transformational process of higher education. I do not

subscribe to the movement which excessively focuses on narrow industry-focused employability objective-led curricula in higher education. A more pluralist, balanced approach to higher educational objectives fits with my perspective. I agree with Robinson, that an enriched climate for innovation and creativity within the higher level educational environment, would in turn enrich the lives of the individuals and teams who populate this work/study environment (Robinson, 2011). Such a climate could nourish the creative potential of staff and result in the development of more innovative work processes, practices and study programmes, impacting positively on graduates and collegial interactions. I acknowledge that my experiences have coloured my perceptions. My ontological perspective provides for the existence of multiple, fluctuating social realities. Fully conscious of the predispositions in my approach to this study, the appropriate research paradigm emerged to systematically and critically evaluate findings, address the research aim within this context and mitigate against potential partialities.

Occupying the space between

Whether we are insiders or outsiders, qualitative researchers are not separate from the study. We have direct personal contact with our participants. We participate fully in the choice of research venues and selection of participants, analysis and interpretation of the data. We hear the individual voices and stories.

> The intimacy of qualitative research no longer allows us to remain true outsiders to the experience under study and, because of our role as researchers, it does not qualify us as complete insiders. We now occupy the space between (Dwyer and Buckle, 2009, 61).

Rather than attempting to position myself at one or other dichotomic alternative, I felt it more appropriate to locate myself in the space in between (Dwyer and Buckle, 2009). By switching perspectives when interpreting research findings, I can surface, check and endeavour to faithfully illustrate, the multiple realities within this socially complex HE research context.

Ethical issues

The University of Lincoln's ethical guidelines for research and the British Educational Research Association's (BERA) Ethical Guidelines for Educational Research were consulted and adhered to for this study. BERA guidelines are also commonly employed within the Irish research context. I have briefed, consulted with and received permission to conduct this research from the guardians of ethical policy within all the higher-level institutions under study. A full ethical report was prepared for The University of Lincoln (UL) describing how I might mitigate against emergent ethical issues; this report can be found in the EA2 form attached in Appendix 2: Ethical Approval Form.

One of the ethical issues of concern was the hypothetical unfavourable light which might be cast by study findings on one or more of the institutions under study. I wanted to ensure I was not prejudiced or quietened by the fact that my research sponsorship originated within the sector I was examining. In practice, there were no conditions or interventions associated with the funding of this research. Furthermore, I pre-empted potential difficulties by formally advising sponsors of my concerns and I was assured of my ability to report freely on any issue which might arise in the research.

To ensure research trustworthiness and mitigate against adverse influences on the theories emerging from my research data, I adopted several methodological initiatives. Participants I interviewed were made aware of my position as a colleague in the Irish IOT context and participants were provided with an opportunity if requested to hear and contest my personal perspectives during the interview (It is important to state that I have no position of authority over any other employee within the IOT sector, so I did not envisage any power conflict. In practice, there was no power conflict and following assurance during interviews of participant and institution anonymity in this study, no display of vulnerability or discomfort during the conduct of this research was detected). Participants retained the right to end or withdraw from the interview process at any point before the completion of data analysis and they signed a form indicating voluntary informed consent had been given prior to participation. Further, interview recordings,

transcripts and reference material to support data were anonymised and securely held.

A Constructivist Grounded Theory Case Study research design was selected because it demands clear researcher reflexivity; rigorous and iterative rounds of data analysis; coding; constant comparison and thematic construction. Further, a leaning towards constructivist grounded theory demanded contextualised memoing and in-depth clarification of the theoretical sampling process, bringing subjectivity into clear view as “people, including researchers, construct the realities in which they participate” (Charmaz 2014, 342). Further, context is considered as analyses are “located in time, place and situation of inquiry” (Charmaz 2014, 342). Thus, in this study, all known potential researcher influences on the interpretation of data would be unveiled. In addition, the process of data collection and the multiple rounds of data analysis would be explained and illustrated in detail. The constant comparison method would circumvent bias by iterative comparison of reflexive personal memos with research data. Rigorous employment of this method would guarantee trustworthiness of the findings in this research. The final decision, however, was made to select this methodological framework for this study following a review of methodologies employed in similar studies in the academic press. The next section in this chapter explains the results of a meta-analysis of organisational climate creativity research designs in the literature.

3.3 Creativity research paradigms

In Chapter 2, multiple methods of conceptualizing, analysing and implementing creativity were acknowledged. Several different approaches to the understanding of organisational creativity and innovation have been taken. Amabile’s Componential Model of Organisational Creativity and Innovation, for example, is grounded in a theory of intrinsic motivation (Amabile, 1982, 2012; Amabile and Gryskiewicz, 1989) and her model identified factors such as supervisory encouragement, work challenge, work group support and the freedom to be creative, as having impact on the climate for creativity and innovation in commercial organisations. Further, in

Ekvall's Swedish University study (Ekvall and Ryhammar, 1999), unbounded subjective variables such as the perceived degree of organisational trust, freedom, support, challenge and participative safety in organisations, were evaluated. Individuals' experiences differ, and their perceptions are subjective. The individual subjectivity integral to Ekvall's and Amabile's organisational creativity and innovation assessment heavily influenced the qualitative approaches used to address research objectives.

The approaches employed by Ekvall and Amabile to assessing organisational creativity suggested a qualitative design for this study, however Long's (2014) meta-study of creativity research designs found quantitative methodologies prominent. Psychometrics and experimental research were the most recurrent quantitative methodologies and the case study was the most popular qualitative methodology (Long, 2014). Long's study collected data from 612 peer reviewed studies published between 2003 and 2012 in five prominent creativity journals. The principal finding was that creativity research methodologies were predominantly quantitative. It is argued that a predominantly quantitative approach may prevent holistic exploration of the creativity phenomenon, as to thoroughly investigate a phenomenon, it is important to look at it from multiple perspectives. In Ferrari et al.'s 2009 study on creativity and innovation focused on Education and Training in the EU Member States, creativity is seen as a complex issue. They found that multiple methods are employed to tackle creativity in research studies to "arrive, [….] at different conclusions" (Ferrari et al. 2009, 6).

Ultimately, the choice of research methodology reflects the ontological and epistemological assumptions of the researcher. Long (2014) claims researchers favouring quantitative studies see knowledge as objective and believe in the existence of a social reality external to the researcher who through observation, can uncover universal laws. In contrast, Long claims that qualitative researchers assume there are independent social realities and that knowledge is subjective and personal. Therefore, qualitative researchers regard themselves as insiders and aim to interpret individual experiences (Long, 2014). I was leaning towards a qualitative research design but positioned within the research context, I was acutely conscious

of the subjective role I might play in interpreting research data. I did not want personal academic experiences to prejudice research context perceptions. Any interpretation of the data had to remain faithful to the themes and experiences emerging. To further this objective, I sought to document and generate theory inductively from participants' lived experiences. Having understood that conclusions related to the concept of creativity are subjective and responsive to interpretation, I was conscious that my study would demand a degree of qualitative exploration of individual opinion. For these reasons, the qualitative interpretive research design appeared most appropriate for this study of organisational creativity, as it allows for deeper exploration of participant's experiences.

Having regard to epistemological alternatives, I found the constructivist/ interpretive paradigm a good fit with this study as constructivism infers that social phenomena are in a process of continually being reconstructed by social actors, as they assign meaning to them within the context they live in (Bryman and Bell, 2007). Constructivists "acknowledge subjectivity and the researcher's involvement in the construction and interpretation of data" (Charmaz 2014, 14). Meaning is created as individuals interact with it. Moreover, it considers both the reflections of the researcher and the roles of the participants in the social setting. In contrast, a positivist approach would not be the optimum as the positivist paradigm does not easily permit subjective interpretation. Multiple subjectivist perspectives of creativity exist, and I believe for this study, the constructivist interpretive approach is best placed to gather perspectives related to this phenomenon. The next question to be addressed was which methods to employ to achieve research objectives.

3.4 Designing the study to meet objectives

The aim of this study is to achieve a greater understanding of the provision for academic creativity and innovation in HE professional practice in Ireland and to uncover the factors which have impact on academic creativity and innovation within Irish HEIs, specifically within Irish Institutes of Technology (IOTs). The selection of NPDV for close examination provides the

opportunity to observe how structural limitations interact with creative practice inside the HEIs. The expectation is that analysis of this process would improve understanding of how the climate in Irish IOTs might be optimised to facilitate and support academic creativity and innovation in practice.

Choosing constructivist grounded theory

To determine which methods to employ to meet research objectives, I discussed the possibilities with my supervisor and reviewed research studies in similar higher educational contexts. Elaine Keane's research explored experiences of groups of undergraduate students at an Irish university (Keane, 2014). Keane's research context and intent to gather socio-cultural experiences from participants was similar to mine, though the characteristics of the participant differed: this study relates to academics' experiences and Keane's, student experiences. Keane conducted two rounds of semi-structured interviews and transcribed interviews verbatim. She employed QSR NVivo data analysis software to facilitate coding and conducted multiple rounds of informal and formal analysis. Keane's data analysis detail and transparency appealed to me. Her use of constructive grounded theory to construct "a complex substantive theory that offers multiple perspectives for policy and practice" (Charmaz, 2014, 248) in higher education had a significant influence on my research design.

Grounded Theory emerged from the tensions between quantitative and qualitative sociology research in the United States in the 1960s. Early methodological texts "emphasised data gathering and fieldwork roles […] rather than qualitative analytical strategies" (Charmaz 2014, 5). Anselm Strauss and Barney Glaser (Glaser & Strauss, 1967) developed systematic research methodologies in their study on death and dying in hospitals, refocusing "qualitative inquiry on methods of analysis" (Charmaz, 2014, 5). These strategies:

> Advocated developing theories from research grounded in qualitative data, rather than deducing testable hypotheses from existing theories (Charmaz 2014, 6).

Glaser and Strauss' methodological text sparked increased interest in qualitative methods and countered prevailing quantitative researcher assumptions of qualitative methodologies as unsystematic and biased (Charmaz, 2014). Glaser & Strauss' Classic Grounded Theory proposed the rationality of systematic qualitative inquiry. Abstract theoretical explanations could now be constructed from social processes employing their methodology which included: simultaneous involvement in data collection and analysis; construction of analytic codes from data rather than from preconceived deduced hypotheses; the employ of the constant comparison method, comparing data at each analytical stage; advancing development of theory at each step; memo-writing during the process; sampling not for population representation but towards theory construction and conducting literature review after independent analysis (Charmaz, 2014). This method challenged preconceptions about qualitative analyses being unsystematic and lacking in theoretical substance. Glaser brought many quantitative principles to the method: rigorous codified methods and a specialist codified language. Strauss' experience of Chicago school symbolic interactionism brought the study of action and processes, social and subjective meanings and problem-solving practices to grounded theory. The symbolic interactionism perspective assumes that interaction is dynamic and interpretive, how people interact changes meanings and actions.

Glaser and Strauss each led grounded theory into divergent directions: Glaser's approach is led by an epistemology of realism, where findings emerge from within the data. In contrast, Strauss' epistemological approach is guided by context, where "findings are constructed by inter-subjective understandings" (Dwyer & Buckle 2009, 54). This difference is manifest in the determination of the role of the researcher in Glaserian grounded theory or in Straussian grounded theory. For Strauss, the researcher must be personally engaged with the research to understand the world as perceived by participants. The relativist Glaserian approach requires the researcher to be a more objectively detached observer (Dwyer and Buckle, 2009). Strauss and Corbin added to grounded theory, acknowledging the importance of a multiplicity of perspectives on reality (Corbin and Strauss, 2008) and the interpretive nature of the method. Like Strauss, Mills et al. emphasise the

contextual dimension, relating participants' stories to the world in which the participants live (Mills, Bonner and Francis, 2006).

Given that relating participants' views to the educational context they inhabit is an integral feature of my research, the contextualised Straussian approach appeared to fit with my research requirements, particularly as I would, by virtue of my role as an employee within the research context, become personally engaged with the research participants. I acknowledge the importance of researcher reflexivity in taking this approach.

Keane's (2014) research alerted me to the further development of the grounded theory method by Kathy Charmaz (Charmaz, 1995, 2014). Leaning towards the Straussian perspective, Charmaz termed her revision as Constructivist Grounded Theory (CGT). Charmaz' methodological descriptions (1995) position the researcher as involved in the construction and interpretation of the data, as a co-producer of data. She advocates the addition of a description of the context, situation, interaction, affect and researcher's perceptions (Charmaz, 1995, 33). Charmaz' positioning provides me with a method of legitimately providing for my position as an IOT employee, within the study context. In CGT, subjectivity and contextualised understanding have a place in the study. Approaching this research with experience of a multiplicity of perspectives, the principle of theory co-construction and interpretation of participants' multiple realities appeared to fit and signalled this methodological route. I understood I had to engage in careful reflexivity via memoing at every stage of data collection and analysis to mitigate against data contamination due to my involvement in the research context. Employing CGT rigorously in this fashion, would regulate the risk of bias in my findings.

Combining grounded theory and case study: challenges and strengths

My investigation would require interviews of academics in multiple research venues and therefore there would be multiple data sources, I needed to find an effective method of structuring the data. The case study structure presented a viable possibility. In newer and less well-developed research areas, in particular where examination of context and dynamics of a situation are important, Darke et al. suggest that the use of the case study for

research is useful (Darke, Shanks and Broadbent, 1998). Context and dynamics are important in my research and this is also in a lesser well-developed research area. The case study design accounts for context and allows for depth of content. However, I was alerted by my supervisor to the challenges associated with the combination of the case study with grounded theory, this I considered carefully in spite of Eisenhardt et al.'s belief in the effectiveness of this combination, they claim that it is one of the best bridges from rich qualitative evidence to mainstream deductive research (Eisenhardt and Graebner, 2007).

Glaser warns that utmost care must be exercised to ensure that the canons of case study research do not distort true emergence for theory generation (Glaser, 1998, 40-2). This is a concern as conventionally, the case study method is aligned with the deductive reasoning approach, where theory is developed in advance of data collection. This is regarded "an essential step in doing case studies" (Yin 1994, 28). Yin's contention conflicts with the key principle of grounded theory research: that theory must emerge from the data. Having due regard to this discrepancy, it is important that the researcher clearly specify which methodology is driving the investigation, when the research design involves a combination of case study and grounded theory (Hart and Gregor, 2005).

In this study, grounded theory is the primary driver. I used constructivist grounded theory as the principal methodology to study data collected within a case study structure; theory was generated from the data. I employed constructivist grounded theory to drive data acquisition activities. Further to my choice of the case study, consistent with the relatively unresearched process and setting combination that I was exploring, Benbasat et al. (1987) contend that the case study structure is appropriate for a newer research area; that it permits study of data in a natural setting and leads to an understanding of complex processes (Benbasat et al. 1987).

Additionally, having professional experience in the substantive area of my study, constructivist grounded theory was an appropriate choice, as it provided me with a method to deal with my experience, controlling the risk of introducing bias into the study (Hart and Gregor, 2005). The control is

introduced by the constant comparative method, which forces researchers to state their assumptions and their own knowledge as data (in memos) and to compare this with other data emerging from the study. According to Hart et al., constant comparison is a valuable feature of the grounded theory method in this regard, as it reduces, though does not eliminate, the risk of bias-induced distortions.

The combination of grounded theory and case study has been detailed by Eisenhardt (1989) who contends that theory building from case studies is likely to produce "creative insight" (Eisenhardt, 1989, 546). She explains that the process of questioning the data from the start and reconciling paradoxical evidence using the constant comparative method, unfreezes thinking and produces a more valid "theory with less researcher bias than theory built from incremental studies or armchair, axiomatic deduction" (Eisenhardt 1989, 546).

Glaser's caution regarding the Case study / CGT combination was carefully considered. However, having regard to his and other researchers' experiences of this approach and my intimate involvement with the research context, the advantages of the CGT approach combined with the case study structure convinced me that this design was the appropriate fit to my research requirements within the research context. The next section of this chapter outlines the research context of this study.

3.5 Setting the study context: The Irish HE sector

The Irish HE sector is growing, overall student numbers in the sector "increased from 196,000 in 2011/12 to about 210,000 in 2014/15" (Higher Education Authority, 2016a). Full-time enrolments increased by 11% in the last five years (Higher Education Authority, 2016b). The sector is regulated by the Irish Higher Education Authority (HEA), "the Irish funding, regulatory and steering agency for higher education" (Higher Education Authority, 2016a) and it oversees 7 universities; 14 Institutes of Technology (IOTs) and 7 colleges of education and other smaller institutions. IOTs are higher education colleges in Ireland. The largest IOT has a student population of approximately 15,000, and the smallest, 2,200 (Higher Education Authority,

2016a). While each of the seven universities have developed their own mission and focus, they all have a common broader more international focus than the IOTs and have strong research remits. In contrast, despite internationalisation practices, research, undergraduate and postgraduate programmes which mirror many of the universities, the centralised mission of the IOTs remains more focused on serving the region and the provision of vocational and technical education and training. The IOTs' principal function is outlined in (Irish) law as:

> To provide vocational and technical education and training for the economic, technological, scientific, commercial, industrial, social and cultural development of the State with particular reference to the region served by the college (Irish Attorney General, Regional Technical Colleges Act, 1992 s 5).

Contemporary drivers of change in the system

The Irish IOT sector is undergoing significant structural change at a national level. In addition, the Irish HE sector is experiencing significant global competitive pressures. To meet global competitive challenges, several smaller Irish IOTs are merging and working towards designation as a technological university. Recently, legislative approval for this new Irish higher educational entity has been sanctioned by the Irish Government (eISB), 2018). A technological university is to be distinguished from existing Irish universities by a mission and ethos that safeguard the current ethos, and mission focus, of the Irish Institutes of Technology yet, at the same time, permitting all levels in the Irish National Framework of Qualifications (NFQ)[15] to be serviced. There will continue to be emphasis on industry-focused research and innovation in the IOTs although according to government HE policy, this will be taken to a higher, (perhaps more intense), level in a technological university (Hunt, 2011).

[15] [Note for informational purposes, that the Irish NFQ level 6 equates to a UK level 4 certificate of Higher Education and Irish NFQ level 8 equates to a UK level 6 bachelor degree (National Qualifications Authority Ireland, 2009; Ofqual, 2014)].

The research venues

Interested in the impact of the changes taking place in the sector in relation specifically to the promotion of a climate for academic creativity and innovation, three IOTs were initially selected for investigation, to achieve a greater understanding of the provision for academic creativity and innovation within the IOTs. Ease of access to the venues, facilitated by professional linkages and recommendations were preliminary principal influences on the selection of the first three IOTs. Pseudonyms were allocated to the first three institutes to preserve anonymity as follows: A, Alpha Institute; B, Beta Institute and C, Calypso Institute. Consistent with the theoretical sampling approach in the constructivist grounded theory method, preliminary data insights and research participant recommendations led to an extension of the sample to include two further research venues.

A fourth IOT, Delta Institute, or venue D, was identified by an early research participant as a good practice institute in relation to the provision for a climate for organisational creativity and innovation. This respondent had participated as an external examiner at new programme validations within Delta. Her experience of the culture in this institute, evident to her in the conduct of the New Programme Development and Validation process (NPDV), was that of a climate which promoted and enabled academic creativity and innovation. A preliminary review of this institute's codes of academic practice and of the variety and unique nature of some of their newly launched degree programme offerings strongly indicated practices in this venue might be supportive of academic creativity and innovation in NPDV. It was decided, therefore, as a possible best practice venue, to include this institute in the study. This sampling practice is consistent with CGT methodology.

At a later stage, a fifth research venue was added to the study to address a recurrent early participant question about the support provided for academic creativity and innovation in Irish universities. To provide such insights, a university venue was added: Echo or venue E. The university was selected for study, for illustrative and comparative purposes only. University data

was gathered within a single university research venue, thus sample size in this research was deemed not sufficient to draw conclusive inferences widely applicable to the Irish university sector. Therefore, in this thesis, the university data is reported, only where there are comparatively interesting differences to the IOT data.

The initial objective of this research was not to make generalisations, but to develop a deeper understanding of academics' experiences of their ability to be creative and innovative in their IOT work environments. Therefore, this study seeks to be representative only of the IOTs under research, yet it also provides a transferable insight into the environment for creativity and innovation within other Irish higher education institutions.

The following table, Table 3-1 Student population of research venues, provides an indicator as to the size of the institutes selected for this research study. To preserve anonymity, exact figures of student populations are not provided.

	Total student population (includes full time and part time learners & post graduates as at 2016/17 academic year). **Note: To preserve anonymity, exact figures are amended.**
All HEA funded institutions	198,000
Universities	103,260
IOTs	80,097
Alpha institute	6.5 thousand
Beta institute	5.5 thousand
Calypso Institute	3 thousand
Delta Institute	5 thousand
Echo University	9 thousand

Table 3-1 (Adapted) student population of research venues
(Higher Education Authority, 2016b)

Choice of NPDV as observation context

It would be impossible to study all factors and practices affecting academic creativity and innovation in a HEI, thus one academic practice was selected where academic creativity and innovation might be observed, and

experiences of academics explored, across all research venues. To this end, the new programme development and validation process was chosen. NPDV encompasses the entire process from initial ideation of a new programme of studies through to internal executive board approval; market research; stakeholder consultation and the subsequent development of the programme philosophy; writing up of the modules and aligning the programme to required programme learning outcomes prescribed by quality standards. The process also encompasses the internal and external validation processes through to the eventual listing of the programme on the Irish central applications system (CAO) and the initial graduate offer.

The selection of the NPDV process for exploration in this study is justified as it stands at the intersection of institutional regulatory QA controls and the manifestations of academic creative endeavour via the creation of new programmes of study. According to Moutsios (2013) it is perhaps within the QA literature debating accreditation control processes where we will see the greatest bureaucratic restrictions on creativity and innovation. In effect, NPDV is a place where (often necessary) bureaucratic and creative development can collide. My own experiences as an academic of the tension between creativity and control in the process, also guided the selection of the NPDV process for investigation. Having encountered challenges in this process, I wanted to explore if the same challenges were faced by academics in other institutes developing creative new programme offerings. Thus, an exploration of how institutional NPDV processes provide for, or inhibit academic creativity and innovation, became the appropriate means of observation to achieve research objectives and address the research questions. The following section justifies the choices made in relation to the instruments employed to gather data for this study.

3.6 Instrumentation

Within this CGT driven multiple case study, two methods of gathering data were undertaken: First there would be ongoing documentary analysis of institution, national and European quality assurance policy and accreditation documents, to further understanding of the wider research environment.

This would entail gathering detailed regulatory, political and institution documentation. The second data gathering method would comprise a series of semi-structured interviews of academics recently involved in creativity in programme design and bringing them through the NPDV process in their institute. Their personal experiences of creative development in the academic environment would be documented in this process. In addition, consistent with the CGT methodology, researcher memos and interview observations and notes also would provide rich sources of data. This section provides the rationale for my choices of instrumentation.

In my choice of data collection instrumentation, I was guided by studies undertaken which had similar philosophical and contextual orientations. I examined, among others, two UK case studies related to creativity in educational environments and two studies gathering experiences or views of academic participants, one in the UK and one in Ireland. The first were reviewed in Chapter 2 and were commissioned as part of the Imaginative Curriculum project: Oliver (2002) and Mc Goldrick et al. (2002) employed a common semi-structured interviewing approach to gather academics' views about the place of creativity in curriculum design, (McGoldrick and Edwards, 2002; Oliver, 2002). Similar to the CGT research design driving this study, these were analysed by constant comparative categorisation, findings were comprehensive and displayed detailed perspectives and quotes from the academics, the semi-structured interview appeared to yield rich data in these studies. Further, like my research participants, the samples in these studies represented a range of disciplines from each of the institutes. In another UK study, Crawford (2009) employed a similar semi-structured approach to collect perceptions (on continuing professional development in higher education) from UK academics. Within a multiple case study methodology, she conducted structured interviews with key informants; conducted semi-structured narrative interviews with academics, yielding rich examples from the data (Crawford, 2009). In Keane (2009) semi- structured interviews were conducted in an Irish HE context within a CGT frame in an analysis of socio-cultural experiences of undergraduates. The resultant data examples evident in Keane's findings portrayed the issues effectively. This study strongly influenced my instrumentation choices.

The semi-structured interview format permits more flexibility on the participant's part than structured interview formats, facilitating a more fluid interaction with interviewees and greater data input variety. A dialogical style of interview interaction was employed to permit fluid conversation. This style recognises the multiplicity of experiences and viewpoints which make up a more subjectivist moving reality. In addition, researcher memos and notes constitute a rich data source in this study.

In line with the both the CGT and the case study method of drawing on multiple data sources, an analysis of secondary data sources was also undertaken, to provide context and to triangulate interview data. In each institute, publicly available marks and standards' documentation regulating new programme development and validation were reviewed, in addition to national policy regulating the validation of new programmes of learning from QQI. Thus, participants' experiences of the NPDV processes in their institutes could be compared to the guide and regulatory protocols documented in each respective institute. An analysis of the relevant ENQA or European programme quality protocols was also undertaken to understand how these were reflected in Irish HE regulations. I expected that the degree of detail, process planning, and direction provided for NPDV in these documents, might reflect the extent of clarity and understanding of the process by participants in each institute. In some cases, participant's contributions guided the documentary focus. For example, in Delta Institute (D), participants' experiences suggested greater familiarity and understanding of NPDV procedures than in the other institutes. Participants in Delta explained how in their institution, detailed NPDV guides were written for lecturers and validation panel participants and were publicly accessible via the institution website. I then analysed these documents and compared them with similar Institute of Technology documents. The sources, interview scripts, memos and documentation were imported to QSR NVivo software, the programme I employed for data coding, analysis and interrogation. Further detail on how this software facilitated the generation of theory from the data is provided below.

3.7 Data collection

Sampling approach

My construction of the sampling frame and sample was instructed by my choice of the constructivist grounded theory research paradigm. CGT practitioners locate their analyses in time, place and the context of the inquiry (Charmaz, 2014). Specifically, the CGT theoretical principles which instructed my construction of the sampling frame and sample in this research include:

- Acknowledgement of researcher experience; research context involvement and data interpretation. The researcher is permitted to be part of the world, a principle which acknowledges my role and experiences as a long-term context employee.
- An emphasis on viewing the data from multiple perspectives and the iterative constant comparison of data as the study unfolds. This principle would direct my choice of multiple research venues. It would also influence the review of policy documents in addition to interviews. (Refer to Table 3.2, for detail).
- The CGT Theoretical sampling method of simultaneous data gathering, coding and analysis: This principle would influence the data gathering process and the location, context and number included in the sample. In this study, interviews in the first three venues led to the addition of further venues and interviews in original research venues.

A random or probability sampling method would not have been appropriate in this study as this method suggests the phenomenon can be generalized to be representative of a wider population. In CGT, theoretical sampling data collection, analysis and theory generation occurs iteratively and continuously. Ongoing analysis influences what and how much data to collect next and from where (Glaser, 1978). The complementary case study approach served to act as a structural mechanism to classify institution data.

The decision to add a university venue to this research was due to participant curiosity and recommendations and my personal interest in how the NPDV process played out in the universities. The choice to include this one university serves as an indicator only and does not colour the findings of this research which primarily concentrates on Irish Institutes of technology, but is used for comparative purposes, to illustrate emergent

differences. A further influence on the sample depth concerns the communicative nature of the academics involved. Participants in the main were willing communicators and had lots of opinions and experiences to contribute. To efficiently collate these views, the semi-structured approach was preferred, and the interview schedule duration was limited to a maximum of 30 minutes unless participants wished to otherwise moderate the duration.

Sample size

In grounded theory, sample size can vary greatly and is not the primary concern. The researcher must acquire sufficient data to "create [a] theoretical explanation of what is happening in the situation" (Cohen et al., 2007, 160). The researcher does not know the size requirements of the sample in advance and continues to gather and build on previous data until theoretical saturation is reached (Cohen, Manion and Morrison, 2007). Theoretical saturation is reached when no new insights or categories are produced even when new data are added (Cohen, Manion and Morrison, 2007). Continuous iterative additions are made to the sample until this point is reached. In my study, the number of interviews needed to reach theoretical saturation was unknown at the outset. However, a minimum of fifteen interviews was expected within the original data round of three IOTs. In total, twenty interviews were conducted, and two additional venues were studied, at this point theoretical saturation was reached.

Sampling round inclusion and the profile variance of research participants.

Sampling rounds	Case Profiles	Age	Gender	Tenure	Location	Discipline	Role	Sector
1	10_C_Sal	45-55	Female	6-10 Years	C	Science	Senior Management	IOT
3	11_E_Laura	35-45	Female	5 Years	E	Law	Lecturer	University
1	12_A_Sam	55-65	Male	10-15	A	Science	Management	IOT
2	13_A_Tim	45-55	Male	10-15	A	Technology	Senior Management	IOT
2	14_A_Eric	45-55	Male	10-15	A	Engineering	Management	IOT
3	15_D_helen	35-45	Female	10-15	D	Humanities	Management	IOT
3	16_D_Len	35-45	Male	6-10 Years	D	Education	Management	IOT
3	17_E_Liam	45-55	Male	6-10 Years	E	Law	Lecturer	University
3	18_E_Ian	55-65	Male	15-20	E	Science	Senior Management	University
2	19_C_Anne	45-55	Female	10-15	C	Sports	Lecturer	IOT
1	2 A Tara	45-55	Female	10-15	A	Technology	Lecturer	IOT
2	20_C_Breda	45-55	Female	6-10 Years	C	Business	Management	IOT
1	3 A Teresa	45-55	Female	10-15	A	Technology	Lecturer	IOT
1	4_C_Shane	45-55	Male	10-15	C	Sports	Lecturer	IOT
1	5_C_David	25-35	Male	6-10 Years	C	Design	Lecturer	IOT
1	6_B_Clare	55-65	Female	15-20	B	Communications	Lecturer	IOT
1	7_B_Stephen	45-55	Male	15-20	B	Social Science	Senior Management	IOT
1	8_B_Maria	35-45	Female	6-10 Years	B	Marketing	Lecturer	IOT
1	9_B_Tony	45-55	Male	10-15	B	Business	Management	IOT
1	Pilot interview transcript	55-65	Male	10-15	A	Humanities	Lecturer	IOT

Table 3-2 Sample and participant profile variances

Characteristics of participants and sampling criteria

Research participants are academics from within four IOTs across Ireland and one university venue (see Table 3-2 above). For inclusion in this study, participants were required to have experience of the NPDV process in their institute and a minimum of five years' tenure within the relevant educational institution. The assumption inherent here is that after five years in the institute, participants would have had the opportunity to experience the full cycle of programmatic and institutional reviews (conducted typically every 5 years within this environment) and thus would have ample experience of institute curriculum development processes. In effect, 9 of the participants had also been involved in NPDV processes outside their own institutions, these additional perspectives added richness to the interview data. In this way, perspectives and details from NPDV processes from 3 additional IOTs and 2 additional universities were detailed in the interviews, bringing in, unexpectedly, a wider perspective of the processes in the sector. 17 out of the 20 respondents have over nine years' academic experience in their own institutes. The rich experiences gathered in the interviews reflects the lengthy academic practice and sector understanding of the participants. Furthermore, the duration of prior experience in other academic institutes is not factored into the figures in Table 3-2. This study has benefitted

greatly from the professionalism and experience of the participants. Their understanding of the sector and the issues which have impact on creativity and innovation of academics is reflected in the data. Table 3-2 above, Table 3-3 below and Table 3.4 below illustrate the wide variety of age groups and professional roles represented by participant gender in the research. This relatively even distribution of roles, gender and age groups was facilitated in part by accident. However, consistent with the CGT theoretical sampling approach, in one incidence, it was corrected. Thus, the resultant sample in this research study is broadly representative of academic disciplines and roles, age groups and gender in the four IOTs in this study. The sample from the university sector is too small to be broadly representative but does not present difficulty as data from this venue is examined for reflective and comparative purposes and to raise issues that are not evident in the IOTs.

Distribution of professional roles by participant gender					
	L	HoD	HoS	SM	Totals
females	6	1	2		9
males	4	4	2	1	11

Table 3-3 Distribution of participant roles by gender

Age distribution by participant gender					
	25+	35+	45+	55+	Totals
females		3	5	1	9
males	1	1	6	3	11

Table 3-4 Distribution of participant age by gender

Explaining the variance in respondent numbers

It is important to point out the variety in the number of participants from each venue, Alpha has the largest number of interview participants, 6, and this is explained in the findings by the need to interview more participants in this venue, given the polarity of the views expressed by the initial 4 first round participants in comparison with the other venues. Calypso provided 5 interview participants and again, the need arose to include participants in this venue as I felt I had not got an accurate picture of the process from the 3 participants in the first round. Beta provided 4 participants and interview data was relatively consistent therefore I felt no requirement to interview further after the initial round in this venue. In Echo university 3 participants were included in the third and final round of data collection, for informational and comparison purposes. The 2 participants in Delta each provided comprehensive rich hour-long interviews which were highly informative. Both participants provided me with institute documentation from the registrar's office to corroborate experiences of the NPDV process and ample documentation for this institute NPDV process was found on the web. In addition to the Delta participants' perspectives, I had further experiences recorded of NPDV in Delta. Some early research participants from other institutes had acted as external reviewers at NPDV processes in Delta and these perspectives triangulated the experiences of the Delta participants. There was, therefore, no need to collect further data from Delta, hence the lower number of interview participants. Figure 3-1 below illustrates the number of interviews undertaken in each institute.

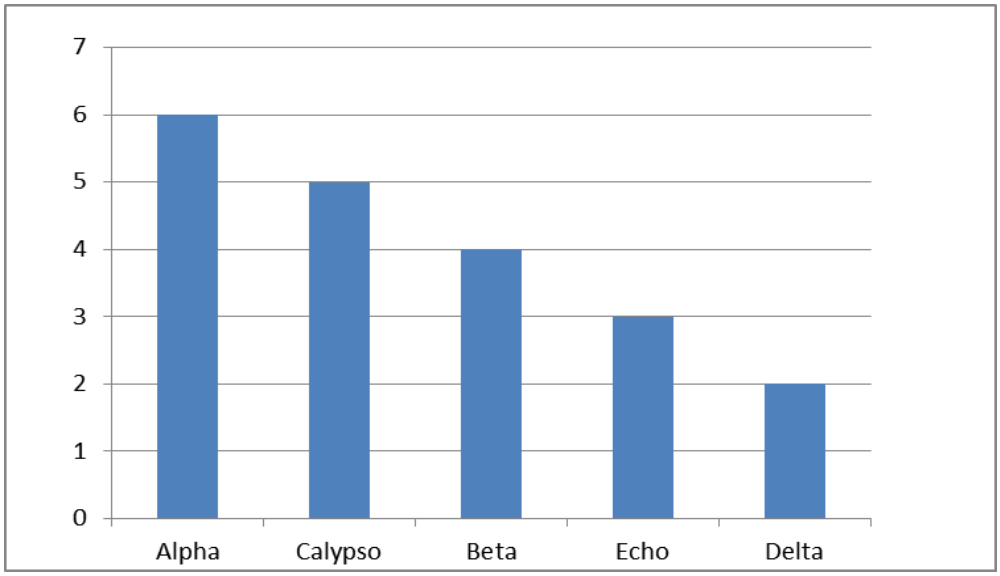


Figure 3-1 Number of research participants per venue

Access to participants and theoretical sampling rounds

Following approval of a request from the in-house registrar for permission to conduct research, the registrars were requested to email my request for participants, to staff in each research venue. Thus, academics in the IOTs were invited by their in-house registrar to volunteer as participants for this research via email. There was little requirement for participant shortlisting as participants were informed about the criteria for inclusion and an appropriate mix of gender, disciplinary specialism, roles and age profile volunteered for this study. Registrars were provided with full details of the research project in line with University of Lincoln ethical obligations and were asked if further ethical approval was required. No further ethical approvals were required, and approval was granted to conduct research in each venue. The request for the registrars to forward my participant call to all staff inside their institute was issued immediately in two of the institutes and was issued after some follow up, in the others. An open invite via the registrars to all staff permitted self-selection of participants who could actively contribute to the construction of my analysis, and co-construct the emerging theory (Keane, 2014).

In the initial round of interviews there were 3 IOT venues: Alpha (A); Beta (B) and Calypso (C). Following coding and iterative constant comparison of the categories in the first round of 11 interview transcripts, research memos and institute documentation, based on emerging categories and recommendations by participants, two other venues were added to the study and some further interviews in the original venues were conducted.

Thus, in the second round of data collection, two further interviews were conducted within Alpha, to further verify findings which were significantly different to the other institutes. In Calypso, there were gaps in the data, therefore two further interviews were also conducted in this venue.

As outlined earlier, early participants in this research had had experience as external validation panel adjudicators in Delta. They experienced a culture of collegial respect; validations conducted in an efficient and effective manner and an institute senior management strongly supportive of innovative development.

Participants suggested this might be potentially be a best practice institute with a climate conducive to creativity and innovation. I wrote to the registrar of Delta who agreed to put out a call for research participants. As it was exam time, participant volunteering was slow but eventually two volunteers made themselves available to me. Both participants interviewed in Delta provided rich in-depth data which coincided strongly in their appraisal of NPDV process experiences. Further, documentation provided by the registrar and the institute website strongly corroborated participant stories and experiences. The publicly available NPDV guides supplemented and verified interview data, therefore it was not necessary to conduct further interviews in this venue.

Access to participants was facilitated by institute registrars in all but one venue, the university. In the third round, I included one university venue as four out of the 17 participants interviewed in the preliminary rounds expressed interest in how NPDV played out in the universities. Contact was made via my professional network with one university registrar who provided an overview of NPDV processes in the university sector in Ireland and informed me of a current strategic drive towards innovative curricula development in his university. I applied for approval to conduct interviews in this institute and although the registrar approved conduct of the study, he requested that I seek participants directly by email, not wishing to intervene in sample selection. Via my professional network, access to three participants in this venue was obtained and the resultant data was studied for comparative purposes. The slight variance in sampling methodology did not present a concern as the university data is presented in the findings for comparative and informational purposes only.

20 participants were interviewed in total.

Location; timing; recording and transcribing interviews

All interviews took place in the participants' places of work. Seven of the interviews took place in reserved empty lecture rooms and the remainder took place in participants' own work offices, at their request. Transcription and coding of the interview script took place as soon as possible after each interview.

All interviews were recorded and transcribed verbatim within two weeks of each interview taking place. Researcher memos and observations were also transcribed. Dragon Nuance software aided transcription and Audacity software was used to manipulate and store recordings. All transcripts were coded for security and pseudonyms were added to institutes and to participants. Transcripts were imported to QSR NVivo 11 software for analysis, and in addition, they were also printed out for manual review and analysis. Interview durations varied from a minimum of 25 minutes to a maximum of 50 minutes.

The pilot interview

Ethical approval was obtained from University of Lincoln and from the relevant institute registrar before conduct of a pilot interview. A volunteer from one of the institutes was solicited via a generic email. Once a participant expressed interest, I sent a preliminary email to him explaining the project in greater detail and he agreed in principle to participate. A consent form and the interview schedule were forwarded and signed two days prior to the conduct of the interview. Experiences of the pilot found the interviewing method and style largely adequate to inform and reassure the participant and address, discuss and elicit rich responses to research questions. John was allocated as the pseudonym and he provided examples of his experiences of a lack of organisational support for the emergence of academic creativity and innovation in NPDV. Several novel and unexpected recommendations to address difficulties related to this lack of support emerged. Two codes assigned to the data stood out: *developing sand pits* and *demolishing brick walls*. The first was a reference to the many organisational brick walls people ran into when they were trying to be creative. To promote a creative organisational climate for academics, John suggested HE institutes should be *sand pits*, or places for experimentation. He suggested, that teaching and learning control systems, to permit flexibility, should ideally be separated from production and administration control systems. John proposed that multiple *sand pit* subsystems across HE institutes could be developed to separate control systems from experimental systems. These findings demonstrating difficulties with academic controls over innovation, resonated with criticisms levelled at academic control structures by Moutsios (2013) and Harvey (2004) in the literature. Pilot findings were encouraging at that early stage.

The 30 minutes allocated to the pilot was found to be adequate. There were no technical issues or recording problems with either data collection or transcription of the interview. Difficulties encountered in the pilot related to the recording of personal data. When I listened to the transcript I felt asking and recording specific age detail to be an invasion of privacy though it had not seemed to matter to John. So, in subsequent interviews, I did not ask the age question directly but approximated the personal detail instead. In addition, two of the questions I had originally put in the schedule elicited yes / no answers, so these were eliminated from the improved version of the interview schedule. Another question created confusion, so it was clarified for the next interview.

During the transcription of the interview, there were difficulties associated with the recording of silence, emphasis and exasperation. Recording silence created particular difficulty because there were many reasons for silence (unknowing; protest; confused). These human communicative expressions were laden with meaning, and it was decided to record these manually at the interviews with a notepad, using shorthand with smileys. When the interview was being transcribed, descriptions of these non-verbal methods of communication were added in brackets, shown in italics in the following excerpt:

> *(Time: 4m.20s)*
>
> ***Janine**: So, have you been involved in or are you aware of any other project in Alpha, which you believe was a creative development?*
>
> ***John**: mm (silence)* 😶😕😕
>
> *(Time: 5m.00s)* 😶😶
>
> ***John**: (😕 visibly having difficulty finding examples of creative projects) mm… was there anything creative?? … no, I don't think, looking back at the department I am working in, that there was anything that stood out as being exceptionally creative…*
>
> *Source: excerpt from John's pilot interview for this study.*

The interview schedule was amended to address any weaknesses which became apparent during the pilot interview and a new interview schedule was redrafted. The participant information and consent form were also amended. Copies of both these forms are found in appendix 2.

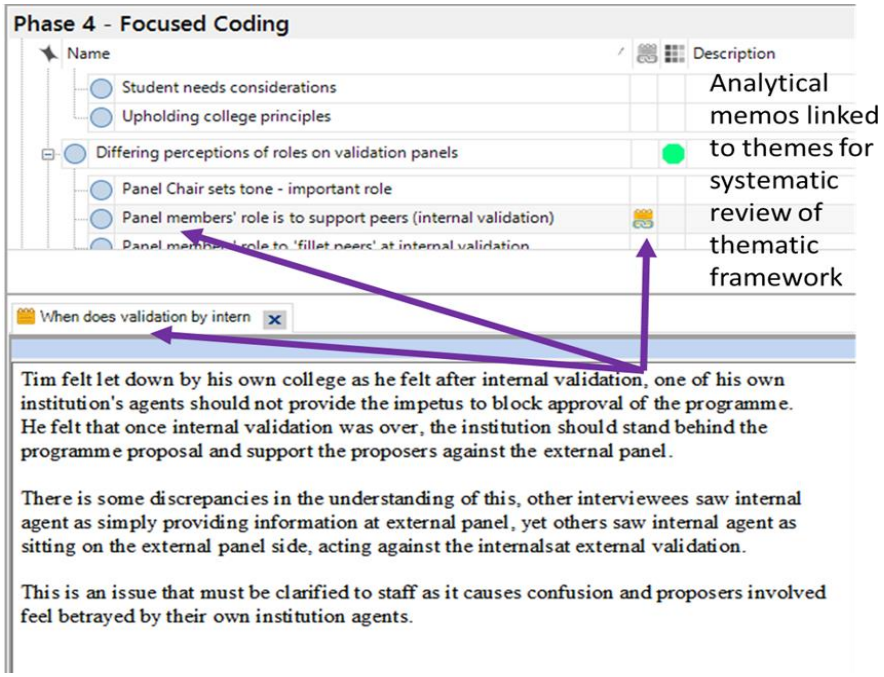
3.8 Data analysis

In line with the constructivist grounded theory methodologies already outlined, I engaged in a close study of action in context, paying attention to language, as language shapes meaning and influences action. True to CGT, I had to remain conscious of my own influence on the data during this process (Charmaz, 2014; Keane, 2014). My prior experiences within the IOT sector gave me an understanding of the context, permitting me to identify the different NPDV stages and interpersonal dynamics inherent in the process and record them in memos, thus facilitating the co-construction of categories and theory alongside the participants. Whilst acknowledging this experience, I had to remain open to diverging perspectives. Throughout the data collection and analysis process, I remained aware of the interpretive and co-constructive role I played, given my contextual familiarity. I stuck closely to the CGT method to ensure transparency. While within the postmodern research frame, subjectivity is both assumed and appreciated (Russell and Kelly, 2002), it is important to clearly articulate the ontological perspectives, background and motivations of the researcher. By articulating these clearly as I have done, the point of departure has been clearly stated, and the research is contextually framed. This elucidates and thus mitigates to some extent, researcher effect and researcher bias.

Though much interview transcript analysis was conducted manually during the process of transcribing the interviews, the computer assisted data analysis software program, QSR NVivo 11 facilitated analysis and added greatly to process transparency. In the following paragraphs, I will outline the chronological data analysis process undertaken.

Data Analysis Software

QSR NVivo V11 software was used to support systematic data analysis. NVivo is a software package which enables the collection, organization and analysis of content from interviews, focus group discussions, surveys, audio, social media, videos and web pages (QSR, 2014). QSR NVivo 11 software enabled secure storage of my data, straightforward access to quotes and institute documentation. It also facilitated continuous iterative data re-categorisation, coding, recoding and constant comparison of the data. Patterns in the data were uncovered by employing the software to query and visually display the data in tables, thus theory development was facilitated. However, interpretation of meaning in data remains within the domain of the researcher. It took several months to become familiar with the features within the software. Policy documentation; literature data and all the transcripts were imported and coded within the NVivo database. Five coding phases were undertaken and are detailed in the code books attached in Appendix 5. The fifth-round reduction is visible in Appendix 6. Memos linked codes from transcripts to institute policy documentation, relevant paragraphs in papers and emerging theorisations. See Screenshot 3-1 below and Appendix 7 for an example of an Analytical Memo. Annotations and See Also Links were two other useful functions employed, facilitated by the software. For examples of both functions and how I used them for data analysis, refer to Appendix 8 and Appendix 9.



Screenshot 3-1 Example of an analytical Memo.

In addition to these functions, NVivo permitted me to export data categories and display them visually in Excel and review the relative significance of concepts in this manner. Figure 3-2 and Figure 3-3 below illustrate two examples of data visualisation I found helpful during analysis.

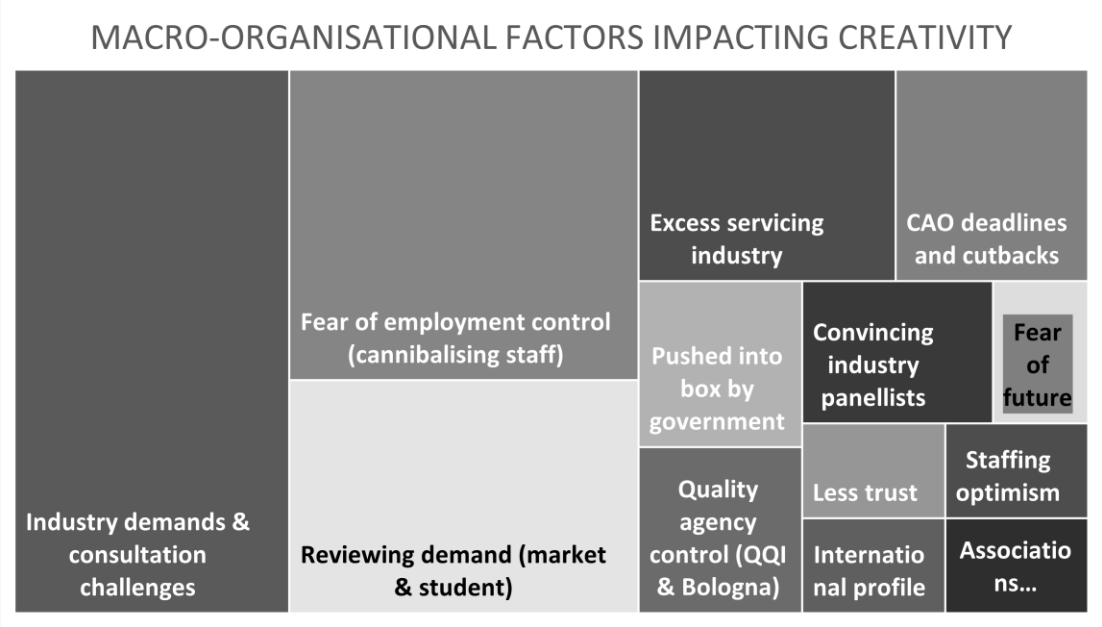


Figure 3-2 Data categories exported from NVivo, displayed in Excel

I employed NVivo to query the data, for example, I could select participants by gender; role; age group or institute and isolate differences in viewpoints. I spent a lot of time doing this type of analysis, with NVivo I found endless data querying possibilities.

Iterative coding, analysis and memo-ing during the interviewing process

Following the initial pilot interview and subsequent adjustments, the next 8 interviews took place in each of the first three interview venues: Alpha, Beta and Calypso. Where possible, I managed to interview two or three candidates from the same venue, on the same day. Interviews were transcribed and analysed as soon as possible, in line with CGT methodology. NVivo was employed to attach candidate attributes to transcripts, these included gender; institute of origin; disciplinary domain and employment role. Initial coding remained open and *In Vivo* nodes were generated. Participants' words were retained where possible. Care was taken to preserve actions in coding. A data analysis overview table is attached in Appendix 3, this is a comprehensive visual representation of the

lengthy data analysis and coding process undertaken in this study. Codebooks are attached in Appendix 5 and Appendix 6.

Leadership - experiences of defective	6	3	4	2
Experiencing lack of leaders' strategic vision and tactics	3	0	1	2
No motivation for staff	1	0	0	0
Leaders not respecting professionalism of staff	5	2	2	0
Staff feeling controlled & lack of trust	4	2	3	0
Staff feeling excluded from process	1	0	4	0
Staff feeling fear & resistance	1	2	0	0
Feeling exposed	1	1	0	0
Staff fighting for support for innovation	5	2	2	0
Going into battle	2	2	0	0
Leadership - experiences of effective	2	3	3	2
Experiences of effective leadership behaviours in practice	2	3	3	2
Leaders exhibiting superior process knowledge	0	1	1	0
Practicing effective management & assuming responsibility	1	2	1	2
President establishing a culture of innovation	0	1	0	1
Respecting staff professionalism	1	1	1	2
Showing appreciation for staff & motivating staff	0	1	1	1
Staff feeling trusted	0	0	1	2

Figure 3-3 Data exported from NVivo & viewed in Excel

Data analysis and Coding phases

Starting analysis directly from the interview scripts, the first round of codes that emerged from the data provided descriptive factual contextual information such as the duration of the NPDV process in each institute and the academics' definitions of creativity and innovation in their workplace. The documentary analysis ran concurrently with interview transcript analysis, as policies and concepts referred to by participants were verified by reviewing institute documentation. For example, participant accounts of the phases of NPDV process were compared with the institute NPDV policy and linked to those of other institutes and national Quality and Qualifications Ireland (QQI) policy. Institute NPDV policy documentation had been imported into NVivo. The software facilitated data sorting, categorising, and matching. I found it easy to record my reflections and interpretations and link them to the various configurations of the data. This first phase of coding resulted in 180 codes and that took 11 months of part-time work. It began after the first pilot interview and continued until the preliminary interviews were completed in March 2016. At that stage, I had codes which were not as alive as I would have liked. However, the research context had been clearly defined, and academics' views on the value of creativity and innovation in their workplace were clarified. This first phase of findings was

developed further, and findings are presented in Chapter 4. In the appendix, this first round of coding is not represented as it is too lengthy, coding phases 2 to 5 are attached.

Disappointment

Though this initial coding phase was important, I felt disappointed when I had finished the first phase. I felt the codes were merely descriptive and that the codes did not explain what was really happening. I had not yet captured the valuable personal experiences, attitudes and thinking of the academics. I had not yet conceptualised their experiences of the impact NPDV had on academic creativity and innovation. I felt I had contextualised the data, and triangulated transcripts with documentary sources in this regard, but experiences, actions and the impact of the social environment on academic creativity and innovation were still buried in the data.

Theoretical sampling in practice – incorporating new venues

During this first phase, having analysed 9 transcripts and the relevant institute and national policy documents, I decided to incorporate 2 more venues into the research. This is consistent with the theoretical sampling method in CGT, new data is gathered as it is required. As outlined above, Delta was incorporated as a research venue following participant recommendations. In addition, four early participants had expressed interest in the NPDV process in Irish universities. They wanted to understand how university academics experienced creativity and innovation in NPDV and how they compared to the IOTs. This was an interesting question, I felt I wanted to have some answers, even if they were limited. I felt it pertinent, particularly as I was a doctoral researcher within the University of Lincoln. As the primary context in this research is the Irish IOT, a comprehensive study of NPDV in Irish universities was beyond the scope of this research. However, I decided to study the processes in one university to identify some issues and raise comparisons, though they would be limited, and findings would not be transferable. I contacted the registrar of Echo university who gave me permission to contact participants directly in his institute.

As previously detailed, 2 very rich interviews sufficed from participants in Delta institute. 3 interviews sufficed in Echo University. Given that these were interviews

conducted later in the process, I had by then become a more effective researcher. Furthermore, candidates in these institutes openly provided more detail about internal processes and practices. My observations in these two final interview venues recorded a culture of transparency and openness and little fear and concern about confidentiality when participants from these venues were being interviewed. Transcripts from these venues echo my observations in memos. A further 6 interviews were also conducted in the original three institutes to triangulate perspectives as some differing views were emerging.

Data analysis phase 2 - Moving the data forward

Finding that I had not yet captured what was essential in the data I found guidance which assisted me in moving the data forward from Charmaz (2014) and Keane (2013). To closely examine action and processes they suggested to:

> Use gerunds because these words nudge us out of static topics and into enacted processes (Charmaz, 2014, 245).

Having consulted with my supervisor, I decided to start again from scratch and manually go through all the interview transcripts focusing on verbs, action, opinion and feeling. I decided to employ gerunds to describe what I found. I printed out and reread all the transcripts, cut out quotations, related them to categories and sorted them manually into envelopes on the kitchen table, see below (Photograph 1). I had also begun to concentrate on attitudes, metaphors, motivations and experiences described by participants. I noted the categories which arose more frequently, employing gerunds to categorise findings.

Photograph 1: Kitchen table phase 2 coding

This round highlighted the complexity of the new programme development process; how academics were struggling with the process and the lack of supports available to them as they tried to develop innovative new programmes. Significant also was the lack of trust participants highlighted within the IOT sector level in their professionalism and how senior management actions and leadership culture stood out as significant factors having impact on academic creativity and innovation in NPDV. Issues impacting on academic creativity and innovation began to emerge at three levels, factors which impacted on the individual and team; factors which had impact at organisational level and factors originating outside the organisation.

Equipped with an increased understanding of my data from the manual coding exercise and employing Charmaz' gerund isolating technique, using colour coding and stripes, I then spent 34 hours recoding every transcript systematically within the NVivo software using coding lines and colours, permitting a second round of codes to emerge. Charmaz (2014) advocates this method of on the job coding directly from the transcript. She suggests that, rather than applying pre-existing categories, we should try to see actions in each segment of data as they emerge. Data was not pushed into categories. Categories emerged as required by the data. I focused heavily on gerunds, and other verbs and concepts which reflected experiences, actions, beliefs, attitudes and feelings related to their attempts to be creative, in NPDV. I reflected on the codes as they emerged, they represented the unexpected and the expected, similarities and differences, negative, positive and neutral issues. The data was becoming alive. Examples of this new vibrancy are evident in the nomenclature of the second phase codes:

> Filleting peers; Developing alone; Screaming and kicking open doors; Seeking challenge; Lacking process experience; Seeing innovation as risky practice; Having free rein; Being passionate; Feeling frustrated; Feeling blocked (Coding phase 2 – data becoming alive).

To ensure I had captured what the data was saying, I returned to the hard copies of the transcripts and spent 32 hours re-reading them, looking at the big picture as well as the detail and creating manual memos of the salient concepts. I compared manual codes, the categories in the envelopes and my 2nd phase of codes in NVivo. I was satisfied that no new categories or concepts were arising,

and I felt no more interviews were necessary, I felt I had reached theoretical saturation and had captured what was essential. However, I had so many codes, categories, subcategories and memos, I now was tasked with condensing them and concentrating on salient points.

Reaching theoretical saturation

The later transcripts were coded for context and then again for action, attitudes and feelings. When I had finished coding the 20th transcript, there were no new nodes generated within NVivo, no new codes had arisen. In fact, I noted that when the 11th interview was coded in phase 2, new codes began to emerge less frequently. Codes were continuously compared and merged, and new categories were generated. Experiences and perceptions began to mirror those already recorded. The following table shows how new codes emerged less frequently as I moved through the transcripts, in interview 1, 10 codes emerged, and in interview 10, I added 8 new codes; by interview 20, there were no new codes. The two outlier interviews, where extra codes were generated breaking the diminishing trend (visible in Figure 3- 4 below) can be explained by the fact that both these academics had much to say on their experiences of validation. Interview 13 involved Tim, a technology academic from Alpha who, relative to other interviewees, described extreme negative experiences bringing creativity through the NPDV process. He used interesting metaphors and descriptive language to describe his experiences, I added many of his metaphors as In Vivo codes, hence the large number of new codes in this interview. Experiences were not new, but the expression of them merited inclusion, terms he used included:

> Dealing a killer blow at validation; staff feeling let down; the institute putting hurdles in front of you; we had to do all the running (Tim, interview 13, Alpha).

The second Interview which breaks the diminishing codes trend was interview 17 and involved a university academic who described the university process in detail, hence the new codes in this interview. Apart from these two outliers, we can see clearly from Figure 3-4 below, that the number of new codes per interview gradually diminishes, and by the time interview 20 is conducted, no new codes are required. This second round of NVivo coding, which had also included a manual coding stage, ended the direct coding process from the original scripts and documents.

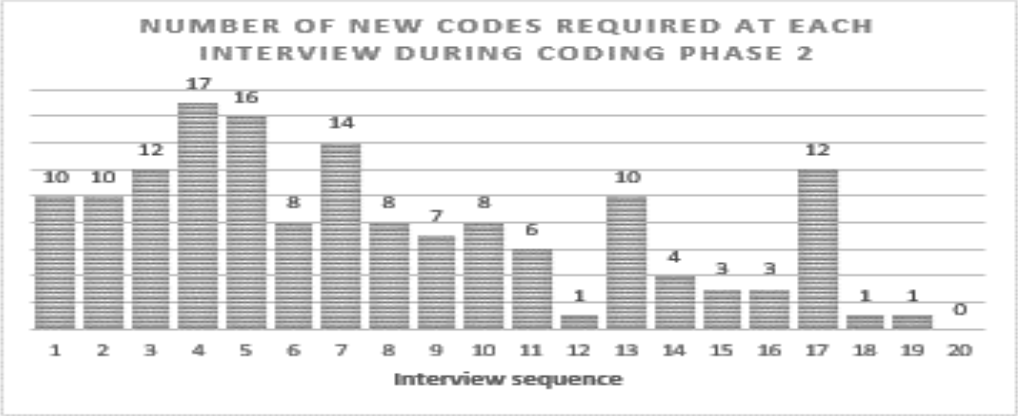


Figure 3-4 Reaching theoretical saturation: new codes diminishing per manuscript

Phase 3 or the open coding stage yielded 42 initial codes and 145 open sub-codes. This third round of coding went into detail and I found the data was split into fragments, I needed to now look at putting the bigger picture together.

Phase 4 – Axial Coding, data reduction yielded 4 core categories and 29 sub-categories. I analysed the codes and their meanings. I sorted codes into branches and grouped them together to contrast, refute and explicate concepts. In this round, I rigorously cut into the concepts, ruthlessly eliminated node and branch repetition and pulled together the big ideas which were being put forward. I asked questions of the data. I worked through concepts, isolating the issues. For example, in 3 of the 4 IOTs, participants found pushing creative programmes through NPDV challenging, and they had differing perceptions about the purpose of the final stage of the process, validation. Further, there was no shared understanding of the role of the registrar in the process. I employed NVivo to isolate the references to the registrar in each institute. I reconfigured the question to query difficulties encountered in the external validation phase, I compared the data to the participants' perceptions of leadership for creativity and I continuously added memos and recorded annotations about my thoughts and conclusions related to emergent concepts (see Appendix 7 and Appendix 8) for examples of memo writing, and annotations functions employed).

Phase 5 Final Focused Coding – yielded 4 themes and 12 sub-themes. This final round of coding reduced the categories further. Employing the CGT approach of constant comparison, I kept going back over the codes, noting matching and conflicting viewpoints. I now had four major themes. A tenuous theoretical framework began to emerge, see Table 3-5 below:

Phase 5 – Final Focused Coding - Data Reduction/Consolidation resulted in 4 themes and twelve sub=themes emerging from the data	Interviews Coded	Units of Meaning Coded
Individual and Team level creativity factors	**11**	**47**
Demotivating the team (brick walls, consultation issue & workload inequity)	3	3
Emphasising importance of teamwork	6	9
Factors affecting individual creativity	10	35
Macro-environmental forces	**18**	**80**
Governance and Control at macro level (national level)	14	42
Industry demands and consultation challenges	14	25
Reviewing market, programme demand & student demand	7	13
NPDV process complexity & role confusion	**20**	**372**
Complexity of stakeholders' requirements of NPDV	18	157
Differing perceptions of roles on validation panels	8	45
Experiencing NPDV in practice	20	170
Organisational level - The impact of Leadership	**21**	**291**
Leadership - experiences of defective	18	123
Leadership - experiences of effective	14	105
Supporting allocating resources to NPDV	19	63

Table 3-5 Emergent themes following final focused coding phase

It is important to note that though the literature guided research design, the literature did not predetermine the concepts which emerged empirically. During empirical data analysis, the literature was used as a reference and to examine where and how these concepts emerged elsewhere.

Conceptualisation of the data

Memos and observations had been written up and linked to and across transcripts and policy documents. Then writing up of the data analysis findings was approached in the sequences as follows:

From phase 1 of data analysis which yielded descriptive content, I recorded the context of the study (this process of anchoring context is consistent with CGT). NPDV process structures and other regulatory policies within the institutes were compared. Creativity and innovation definitions were gathered together and a section on the multiplicity of demands stakeholders had, of the NPDV process, was written up. All of these were clarified and are documented in the first of two findings chapters in this study, Chapter Four, and address RQ1 and part of RQ2.

From phases 2 to 5 of data analysis, the data had become alive with participants' experiences, these experiences were played out in context but had impact on the creativity and innovation of academics across three levels: Individual /team; organisational and meta-organisational (at a level beyond the organisation).

At the level of the individual and the team: Here, factors arose which had impact on the realisation of individual creative and innovative potential within the work environment.

At the organisational level: Factors here included leadership; trust culture; bureaucracy; resources and supports provided for the development of creative initiative.

At the meta-organisational level: Factors here included national and international HE drivers; policy restrictions; disabling structures, processes and procedures. (This section addresses RQ3).

Though the data fell naturally into these categories, the recurrent salient themes which had impact across all the levels included the salient themes of leadership; inter-collegial trust and innovation process support. Other themes emerging included management direction; process complexity; confusion in relation to roles and responsibilities of the validating panel; the need for process training and the impact of meta-organisational controls. It was interesting to observe that these themes were mirrored to a large extent in the literature, as I moved iteratively between literature and data analysis.

3.9 Evaluating the credibility of this research

Rigour is built into the grounded theory method through the inductive-deductive cycle of theory generation. Care in applying the grounded theory methodology correctly is the single most important factor in ensuring rigour (Cooney 2011, 17). The criteria for evaluating research can vary, depending upon the purposes of the study, the disciplinary audience judging the study, the standards set for the conduct of research and the acceptability of the evidence presented. Glaser proposed the evaluation criteria for GT study of fit, work, relevance and modifiability (Glaser, 1978). Adding to these criteria, in her meta-analysis of criteria for evaluating GT research, Cooney (2011) suggests a GT should

incorporate detailed memos comprehensively outlining sampling and analytical decisions; the cross-checking of emerging concepts against participant meanings; and consultation with experts to understand if emergent theories fit with their experience of the concept researched.

In this research study, given the constructivist approach employed, which acknowledges that concepts emerge from data co-constructed by researcher and participant, it is pertinent to refer to Charmaz, the original promoter of this methodology, for evaluation criteria. She provides the following criteria for evaluating Grounded Theory Studies: *Credibility; Originality; Resonance* and *Usefulness*. I employ Charmaz' criteria to illustrate the credibility of this study.

Credibility: There are strong links between the extensive empirical data gathered and the arguments and analysis in this study, sufficient evidence is provided to support claims made. Via empirical gathering of participants' lived experiences of NPDV practice within the institutes, intimate familiarity of the research context and dynamics has been achieved. Systematic comparisons have been made in five rounds of coding and categorizing of data. Synthesized categories represent a wide range of participant disciplines and venues: Over 85,900 words were transcribed, coded and analysed from participant interviews, providing a range of disciplinary perspectives, of the same process in four out of the fourteen IOTs in Ireland. Indeed, further reference was made to experiences in at least four other IOTs by participants. Documentary analysis of process policies were conducted to further triangulate participant portrayal of NPDV process experiences in each IOT. There are solid links between the data gathered and the discursive and analytical arguments presented in chapter 5. Indeed, many of the participants words have been preserved In Vivo. Following the analytical process, returning to the literature, providing solid evidence that claims and conclusions were facing in the appropriate direction, I discovered that findings on two out of three levels emerging from this study unexpectedly mirrored Amabile's widely cited research on organisational creativity and innovation (Amabile, 1982, 1988, 2012, 2016), this reinforced the credibility of study outcomes.

Originality: The portrayal of Irish academics' lived experiences in creative practice, that of bringing through innovative curriculum developments in Irish Institutes of Technology, is original. This research has not been conducted before

in an Irish HEI. In fact, only one European in-depth study (Ekvall and Ryhammar, 1999) gathering academics' experiences in professional practice, of the attributes of a climate for creativity and organisation in a HEI has to date, to my knowledge, been conducted in a European university, albeit other initiatives exploring innovation at a higher, strategic level in HEIs have been referenced in Chapter 2 of this study (European Commission, 2014) and Boulos' (2013) thesis attempted to capture examples of academic creativity in action research. The theory which has been developed from this research is original, a fourth layer has been added to Amabile's (2012) componential theory of organisational creativity and innovation, developing the original theory to apply to the Irish HE sector, specifically to Irish IOTs. The idiosyncrasies of the new programme development process in Irish IOTs have not been portrayed heretofore in such detail, neither has the resultant understanding of the factors which encourage and discourage academic creativity and innovation in the academic practice of NPDV been illustrated in detail.

Resonance: The categories developed during the analytical process are sufficient to portray the "fullness of the studied experience" (Charmaz, 2014, 337). Participants' lived experiences were located in context, yet simultaneously abstracted and linked to broader political, societal and philosophical stimuli. As I conducted the interviews, many of the issues having impact on academic creativity continuously resurfaced: the need for leadership direction and support; inter-collegial trust deficits and a need for training and resources allocated to the innovation process. These factors resonate at various levels with participants. The intimate portrayal of academics' engagement with NPDV practice in this study, offers deeper insights about participants' working lives in the IOTs to an extent beyond the scope of this present study, elucidating the mechanisms of control and a political adherence to a particular variety of creativity in the HE system. A greater understanding has been reached in relation to the climate and cultural changes required to support a truly encouraging and constructive environment in the Irish IOTs for academic creativity and innovation.

Usefulness: Fresh insights have emerged from this research which may spark further study initiatives, and which will have implications for senior management in higher educational institutes in Ireland and internationally. Senior management interested in promoting a culture of academic creativity and innovation in their

institutions will benefit from the fresh insights into factors which have impact on creativity and innovation in their institutes (Chapters 4, 5 and 6). Entities which control quality of programme provision may also benefit from the increased understanding of the difficulties academics encounter in the NPDV process. Indeed, many of the roles people play in the validation process need to be clarified and there is potential for the QQI and ENQA to reflect on these research outcomes and adjust quality control policies to incorporate changes. The three-level model of creativity and innovation in HE organisations developed in this study may inspire further research studies across multiple disciplines such as organisational behaviour; HE governance and motivational theory. The model could serve as a theoretical framework to guide examination of HEI climates for creativity in other jurisdictions, testing broader applicability of the model and furthering the understanding of creative climate development in HE organisations.

To ensure trustworthiness of the data and ethical practice, subjectivity of the researcher has been acknowledged and involvement in the process of data analysis has been made transparent in this chapter. I have involved myself in conscious reflexivity (active acknowledgement of influence) and, I have illustrated fully how research was conducted identifying all known parameters of the study. Theory generation has emerged from the data grounded, insofar as possible, in the words and meanings of the participants. I have endeavoured to faithfully reflect meanings inferred by participants in the interviewing process, in line with the principles of CGT:

> Constructivist grounded theorists assume that both data and analyses are social constructions that reflect the conditions of their production (Charmaz, 2014 240).

The paradigmatic frame within which this project resides, acknowledges the influence of the research context and researcher theorisations and interactions with the data.

Triangulation of research findings: Data originating from five different sources, via a process of constant comparison, has provided a valuable means of triangulating findings. The constant verification and comparison of data has provided for consistency of conclusions. Secondary sources, referred to in the interviews, were employed to add deeper dimension to participants' accounts of their experiences. Furthermore, it became evident later, when the final round of coding

was complete, that emergent themes correlated strongly with Amabile's research data (Amabile, 1988, 2012, 2016).

To ensure trustworthiness of the research, the positionality and approach of the researcher; the sampling context; technique and characteristics were all provided. The rationale, method and instruments employed for data collection and analysis were outlined. This chapter showed clearly how the concepts emerged from the data. Tools within the NVivo software package enabled greater process clarity and data analysis transparency.

3.10 Summary of chapter 3

This chapter explained the choice of research methodology employed to fit research objectives and detailed the qualitative interpretive paradigm and rigorous CGT methodologies and instrumentation employed in this investigation. The methodological design dilemma related to the Grounded Theory / case study combination was presented and resolved. Participant demographic and employment detail demonstrated the range of disciplinary perspectives, age profiles and institute experience represented in the sample. The research was contextually located, and ethical issues were discussed.

Charmaz' (2014) four evaluation criteria for CGT research, were employed to illustrate trustworthiness of this study. The originality of the research was highlighted as was the correlation of emergent findings to Amabile's existing componential theory of organisational creativity and innovation (Amabile, 1988, 2012; Amabile and Pratt, 2016).

This methodology chapter illustrated the lengthy process complexities of data reduction and consolidation which was assisted by QSR NVivo 11. Following the analytical process, three levels of factors affecting academic creativity and innovation emerged from the analysis of the NPDV process. These factors arose at individual and team level; at organisational level and at meta-environmental level. In addition, several contextual factors and procedures affecting creativity in curriculum development arose from within the NPDV process itself. These contextual factors and procedures are presented in the following chapter, the remaining 3 levels of factors are presented in chapter 5.

4 Findings: context, definitions, values and controls

4.1 Introduction

This chapter focuses on definitions and values ascribed to the concepts of creativity and innovation, based principally on the analysis of key documents and interviews. It presents findings which set the regulatory context for the more detailed analysis of interview scripts which follows in the next chapter. This chapter is more descriptive than analytical, and it achieves two principal objectives. The first, addressing Research Question 1 (RQ1) establishes how the sample of Irish IOT academics in this study experience, define and value academic creativity and innovation in their workplaces:

> *RQ1: How do Irish Institute of Technology academics define and value creativity and innovation within their professional practice in generic terms?*

The second objective of this chapter is to outline the policies and procedures of one academic creative practice (NPDV), to establish how the higher education system and the IOT institutes under research, support academics in creative and innovative endeavour in their work. This chapter introduces some of the difficulties experienced by participants bringing creative new programme developments through the NPDV process, a process which requires extensive consultations with numerous stakeholders and demands navigation of several regulatory procedures and committees, in the main, without any formal mechanisms or rewards to assist or support the academic. Research Question 2 (RQ2) is partly addressed, in this chapter:

> *RQ2: How is academic creativity and innovation supported in practice within the NPDV process in Irish IOTs?*

Unearthed in the discussions with research participants, was the accepted presence of creative competencies among academics. An absence of comment in relation to the creative deficiency of academics themselves, was observed. The lack of questioning of personal or team abilities to engage creatively in professional practice is supported by the dominant belief in the literature in a *little c* creativity (Craft, 2001) accessible to everyone. In addition, respondents spoke of the great value they placed as individuals on creativity and innovation as a collaborative practice in HE.

The complexity of the practices and policies of NPDV are illustrated and compared across institutes, and findings show a generalised lack of support for academics in this process though greater guidance detail is available in one of the IOTs, indicating that this process is valued perhaps to a greater extent in that institute. To navigate the challenging NPDV process, requires a lot of documentation preparation, stakeholder balancing and debate (For more detail, refer to Appendix 10), this requires resilience, knowledge and skill. New programme development practice requires academics to be creative and innovative, but according to participants, ironically the demands of NPDV innovation process drain creative initiative, giving rise to what this study terms a *creativity paradox*.

Documents reviewed, related to the development and validation of new programmes of learning[16]. Institute NPDV Policies were accessed, in the main, online. Any relevant institute documentation unavailable online was requested and obtained via the relevant academic affairs office of each institute. There were no difficulties encountered accessing these documents. Further documentary analyses involved the review of Irish state higher education regulatory procedures such as the Core Policy and Criteria for Validation and other relevant documentation (QQI, 2013, 2014, 2017) from Quality and Qualifications Ireland (QQI), the state agency which sets and reviews standards for higher educational awards. Many of the Irish quality standards relevant to NPDV reflected pertinent European HE regulatory procedures and recommendations. Thus, European NPDV protocols were also reviewed (Grifoll *et al.*, 2012; ENQA, 2015b, 2015a).

Findings in this chapter set the context for discussions in the next chapter and are drawn from documentary analyses and those interview discussions which relate specifically to participants' definitions of creativity and innovation and from discussions related to the value they place on creativity and innovation in academic practice and specifically in NPDV. Participant experiences of bringing through creative initiatives in their organisations are documented in this chapter via an illustration of system supports and impediments encountered in the NPDV

[16] Note that references are not provided for these individual institute documents, to preserve institute and individual participant anonymity in line with the ethical standards of this study.

process, as the NPDV process, it is argued, lies at the threshold of creativity and constraint in the HEIs under research.

4.2 Creativity as a valued practice in collaborative initiatives

Research participants value creative practice manifest in NPDV as an accessible and welcome active practice of seeing potential, recycling the old and making connections with the new, and innovation is the hard work that pushes creativity through the system. Participants value the broader presence of creativity in their respective academic work environments, they provide several examples of academic innovation, explain that effective teamwork is valued and effective in creative endeavour, reference the need for creativity-enabling mechanisms, and reference a shortage of innovation skills to push creativity through the HEI system.

In discussions centred around definitions of creative people and creative practices in the academic environment, creative people were defined as “those who think differently and recycle old ideas and turn them into something new” (Tara, Lecturer, Alpha) and creative practices involved proactive thinking and seeing things holistically. Examples of creative practices cited included “thinking outside the box” (Helen, HOS, Delta; Len, HOD, Delta) to come “up with ideas that other people may not see” (Teresa, Lecturer, Alpha), the “power to create” (Ian, SM, Echo) and “seeing the potential and opportunities to develop” (Len, HOD, Delta). Laura (Lecturer, Echo University) and Teresa (Lecturer, Alpha) emphasise the creative practice of seeing things holistically, permitting the development of “the narrative which runs through the whole programme” and makes the “big picture” coherent (Laura, Echo). Participants present several examples of creative initiatives and make no reference to an absence of creativity skills in themselves or in their peers.

Teresa, lecturer in Alpha, does however, refer to a shortage of innovators in the system: “I don’t think there is a shortage of creativity. We have a shortage of innovators to push it through” (Teresa, Lecturer, Alpha). Innovation follows creative impetus and respondents concur that innovation is the hard work which implements creative ideas. Innovation is “the realisation of creativity” (Stephen, HOS, Beta) and “cannot be realised without creative input first” (Tara, lecturer,

Alpha). Innovation applied to NPDV, according to the majority of respondents, requires significant time and effort and should be afforded support.

The importance of teamwork and interdisciplinary collaboration in creative academic endeavour is apparent in participant references. The creative capabilities of a “dream team” (Maria, lecturer, Beta) with a “tight focus” (Anne, lecturer, Calypso) who work collaboratively are effective in a conducive environment. Interdisciplinary collaborations and non-traditional, technology enabled, learner engagement are examples provided of curriculum development innovation. Maria, Clare and Stephen from Beta provide some examples of creative new programme developments. The application of dramaturgy modules to accountancy degrees is one example, as is the collaboration between two schools to develop a new interdisciplinary programme and new online programme offerings.

In contrast to Bologna criticisms in the literature review (Harvey, 2004; Moutsios, 2013), Tara, from Alpha, reminds us of the benefits of the (Bologna attributed) institutional structures academics employ, to channel creativity in NPDV. Her reference relates to the structured programme learning outcomes which describe the programme and individual module aims and objectives. These must be specified in the detailed description of each new programme. This reference acknowledges the requirement for an accepted medium or process which is employed to scaffold creative initiative. The implication here is that creative initiatives need supportive frameworks to facilitate their transformation into reality. Organisational structure and systems support creativity by bringing order to creative workflow, according to Patricia Stokes (2006), Stokes believes that inspiration for new ideas comes less from boundary-less freedom than from well-considered constraints (Stokes, 2006). Conversely, Amabile (1996) proposes that the imposition of constraints on creative agency reduces creativity of the outcome (Amabile, 1996). The next section in this chapter will present participants’ experiences of the effects of system constraints.

4.3 Systemic constraints inhibit and encourage creativity

Though research participants agree that HEI Control structures must be rigorous and consistent, the majority experience these structures as frequently inhibiting

their ability to be creative in NPDV. In the literature, Kleiman (2008) supports this contention, he posits that creativity can present challenges to institutional frameworks of constraint. Yet the consistency, rigour and structure provided by existing institutional frameworks are also critical to Higher Education organisational effectiveness. According to one Head of Department (HOD) interviewed in this study:

> *In some respects, it is overly cumbersome the processes we have. Even to make minor changes to programs are very unwieldy and time wasting (Tony, HOD, Beta).*

Lecturers note that macro-environmental constraints such as the pressure to reduce the number of programme offerings on the CAO (Central Admissions for students to higher education in Ireland) and increasing tendencies by the HEA (Higher Educational Authority) to limit the market segment which the IOTs are permitted to serve, impinge on programme development initiatives.

However, system inhibitors may be advantageous, they provide a checking system, which has merits according to some respondents. Three out of the twenty academics interviewed in this study are judicious, in this regard: Tim (HOD, Alpha) felt that new programmes of learning need to be relevant and not necessarily creative. Liam's (Lecturer, Echo) experience is that professional associations' demands restrict creativity in his disciplinary area yet also enhance programme credibility. Further, Echo Senior Manager Ian, explains:

> *Just because it's new doesn't mean it's any good. And because it's not new doesn't mean it's not any good (Ian, SM, Echo).*

The message relayed by these voices is that the traditional should be acknowledged, and new creative initiatives require systemic scrutiny. The introduction of the creative in a traditional higher educational system demands caution. Conversely, Shane's experience is that there is too much caution and not enough risk taking in his institute. He believes there is a low threshold of acceptability for creative development in the academic environment. His experience is that senior management are not willing to take the risks that more radical creativity requires.

> *[Creativity is...] something that's laughed at. There is a creativity spectrum and that kind of creative thinking has almost an instant rejection, because it means stepping outside of what people are comfortable with, particularly*

> *at senior management level. There are a certain amount of risks you can take but there is a comfort zone within which they work. And if there is something outside of that box, they [senior management] don't necessarily have the ability to judge whether it's relevant or not (Shane, Lecturer, Calypso).*

It is evident that a balance is required, creative development is a valued accessible practice in the IOTs and there are system constraints which are necessary in the academic environment to assess creative initiatives. Some of these checking mechanisms, such as the professional associations' input in Echo University, are experienced as beneficial. The degree of excessive caution experienced by Shane in the academic environment was noted and these issues are further explored in the next chapter.

4.4 The creativity paradox – policy mismatch with practice

In 2011, the Irish government appointed an economist to chair the HE strategy group. Colin Hunt (an Irish economist who had, been working with the Australian firm Macquarie Capital Advisers), produced the Irish Strategy for HE to 2030 known as "The Hunt Report". The report calls for "Higher Education to position itself as a central player in developing Ireland's culture of innovation" (Hunt, 2011, 69). However, though creativity and innovation is promoted in strategic HE policy documents at Irish national and EU levels (European Parliament and European Council, 2006; Ferrari, Cachia and Punie, 2009; Hunt, 2011; European Commission, 2014; Cassells, 2016), the experience of Irish academic respondents in NPDV in this study is that there is a shortage of innovation support within the IOTs to push creative developments through, a position reflected in the academic press in Europe and the UK (MacLaren, 2012).

In practice, in the teaching and learning practice of curriculum development, a practice which develops learning programmes for the future, the majority of respondents have experienced a lack of innovation support, examples cited in all venues include: a lack of workload recognition and a deficiency in administrative and financial supports for academic creativity and innovation in NPDV. Furthermore, there is no explicit support function or advisory support mechanism employed in any of the Irish HEIs examined, to assist NPDV programme developers. Lecturing staff claim they need support as they experience difficulties implementing innovative initiatives in NPDV. Reasons for the difficulties cited

include lecturer skill limitations (Eric, HOD, Alpha);[17] senior management innovation support deficits (Sam, HOS, Alpha); an increase in lecturer control measures and a growing level of distrust in the IOT sector which makes "it harder to push out ideas and innovation" (Tony, HOD, Beta). Research respondents in this study are feeling constrained, and unsupported, they speak of the IOT sector culture as increasingly low trust and insecure, and they experience this culture as restrictive of academic creativity and innovation in NPDV. Current national governance structures restrain the numbers of new programmes offered. Increasing control measures in HE impinge on lecturers' time for creative development and create a low trust culture. Academics' experiences of increasing controls and low trust are reflected across the EU and are evident in the literature (Mather and Seifert, 2013; Moutsios, 2013; O Connor, 2014). These increasing controls are seen to have a detrimental effect on academic creativity. According to MacLaren:

> New management practices in higher education run counter to the known conditions under which creativity flourishes (MacLaren, 2012).

Thus, though creativity is valued and is defined in the academic environment as a welcome active practice of seeing potential and making connections, participants find creativity and innovation support problematic in their institutes. This lack of on the ground innovation support does not fit with strategic policy aspirations for innovation in Higher Education evident, for example, in The Hunt Report (2011) and in European HEI policy documentation referenced earlier.

4.5 Complex NPDV regulations: need for guidance

Bringing a creative new programme through the NPDV process is not a simple task. Yet, paradoxically, support within the IOTs (and indeed the university) for curriculum development and validation is limited, according to research respondents. To my knowledge, no comprehensive review of the complex tasks and the support needs of academics involved in the NPDV process has yet been undertaken in the Irish IOT context. This section examines these processes in four IOTs and elucidates the complexities involved in this HE curriculum

[17] Eric is the only one of the twenty research participants who criticises academics for their limitations in programme development expertise in these interviews.

development and validation process. Furthermore, a remarkable paucity of support for academics navigating this process is revealed here, this is significant given the state and EU sponsorship of creativity and innovation promotion in HEIs. The reasoning behind the review in this section, is to permit the reader to thoroughly understand how the NPDV process works in the IOTs in Ireland and to enable them to contextualise this study, providing the reader with a solid platform from which to engage with the deeper analysis revealed in the following chapter.

Extensive time and effort involved: A lot of time and effort is required to develop, design and prepare a programme for validation, and then prepare for the first intake of students. Onerous standards regulate the process. QQI standards and guides require programme providers to have evidence of extensive consultation with industry and other stakeholders and thus prove the demand for the new programme, prior to programme validation. Academics must research the market thoroughly and generally conduct focus groups and discuss suggestions for development with potential and current student, graduate, industry and other social stakeholders, in addition to their everyday lecturing workload. Furthermore, though QQI guides have been greatly improved in recent years (QQI, 2017), specific regulatory protocols are not easily navigable and no national level training in NPDV protocols for developers is as yet provided. QQI is the Irish national higher education programme accreditation agency, and it specifies the content of the documentation for validation of new programmes of learning in the IOTs (QQI 2016, 12). QQI specify that all programmes will be independently evaluated in a formal validation process.

Quality assurance documentation complexities: In all four IOTs investigated, QA institute policies match the requirements of QQI, which are in turn guided by ENQA QA guidelines. The four Institutes of Technology under research have delegated authority to award and validate programmes of learning, this is mandated by section 45 of the Qualifications and Quality Assurance (Education and Training) Act 2012[3] (Oireachtas, 2012). The format and content of programme external validations are, however, specified by QQI standards and following the conduct of a successful programme validation by an IOT, programme documentation must be submitted to the QQI, for inclusion in their order of council and award-types must be consistent with the policies and criteria

established by QQI on the National Framework of Qualifications (NFQ). QQI documents the list of approved awards and includes them on the NFQ and notifies the Central Applications Office (CAO), which is like the UCAS agency in the UK. The CAO lists the programme one calendar year before programme commencement. In effect, CAO lists of programmes are published in March and undergraduate entry to the new programme commences in September of the following year, thus, to list programmes on the CAO, there is a lead in time of 18 months. This is a highly regulated state process which newly developed programmes must feed in to and there is a standardised structure specified for the final (external) validation of the newly developed programme. When developing a new programme, academics must be aware of QQI standards and specifications and the timelines involved before a new programme can be offered to potential graduates. The navigation of these processes is onerous, and innovators must take account of the considerable time delay involved. The timeline and stringent standardisation may result in frustrating delays for innovators.

The standard NPDV process flow: The final (external) programme validation process and criteria are set down by the QQI, however the internal process of programme development and validation which occurs within the institute is regulated by the relevant institute Quality Assurance policies (see Chapter 1, Table 1.1 for a standard process flow diagram and further detail related to this).

In all institutes reviewed, the Academic Council deliberate primarily, but not exclusively, on academic content and relevance of proposals and the Executive Board ensure that the proposed new programme fits with the institute strategic plan and resources. Differences across institutes in NPDV processes arise in two principal areas: The number and nature of the internal validation processes employed, and the number of senior management interventions documented in the process. The degree of internal validation differs in each institute, some are more demanding than others at “outline planning permission” (Tim, HOD, Alpha), which is the preliminary validation stage in each institute. The following table (4-1) was developed to illustrate how internal validation differs across the four IOTs.

Internal validation processes				
Institute Name	Institute Alpha	Institute Beta	Institute Calypso	Institute Delta
Ideation & preliminary evaluation stage	Executive board evaluate programme proposal	School policy committee evaluate proposal	Executive board evaluate proposal	Executive board evaluate proposal
Secondary evaluation stage	Full programme documentation is prepared following granting of outline permission	Executive Board evaluate proposal	Academic council programmes committee (consult with specialists) & evaluate & liaise with Programme board to edit proposal.	Academic council planning committee evaluate
Formal Internal approval process	Formal Internal Validation panel (format replicates external validation process)	Academic council Planning committee evaluate proposal & liaise with programme board.	Academic council consider recommendations	Academic council consider recommendations Governing body note recommendations.
Formal Internal approval process		Full programme documentation is prepared following granting of outline permission	Full programme documentation is prepared following granting of outline permission	Full programme documentation is prepared following granting of outline permission
Formal Internal approval process			Programmes committee consider draft documentation	Registrar uses formal check-list to approve documentation & reserves right to convene formal internal panel validation.
External Validation stage	Proceed to External validation	Proceed to External validation	Proceed to External validation	Proceed to External validation

Table 4-1 Variance in Internal Validation Processes

Fewer peer consultations before documentation is prepared in Alpha: We can see that in institutes Beta, Calypso and Delta, there are several formal and informal committee deliberations prior to programme outline proposal endorsement. An examination of the highlighted cells in Table 4-1 above shows where formal full documentation is prepared. This occurs earlier in the internal consultation process in Alpha than in other institutes, indicating that the development team do the work alone prior to collegial or peer review consultations in this institute. Further, there is a shorter preliminary endorsement process in Alpha and less collegial advice

interventions before proceeding to full documentation development, a formal internal validation process and then external validation. In the three other IOTs, we can see that the full documentation is prepared at a later stage. In Alpha, preliminary proposal deliberations involve executive board only and proposers are then required to develop full documentation for consideration by a formal internal validation panel. The task of completing full documentation for NPDV is extensive and requires formal stakeholder consultations (industry, academic, government, employer, local community, graduates, current students and other HE Providers). It appears that in Alpha, developers do all this preparation more in isolation than in other institutes. Appendix 10 shows the extensive minimum documentation required within NPDV.

Alpha is the only institute which explicitly specifies a formal internal panel to be convened for internal validation, in the documentation (though, in Delta, the registrar reserves the right to convene a formal internal panel). A formal internal validation is where institute academics uninvolved with the development, convene to decide if the new programme meets validation criteria and can proceed to external validation. In Beta and Calypso, internal validation comprises evaluation by several specific internal committees of peers, and documents indicate that this is an iterative process, whereby the proposal moves back and forth across from evaluators to the proposers and adjustments are made during this process. In Calypso, documentation indicates that the programmes committee review the documentation “normally consulting” with specialists. The final stage in the table above is the external validation stage, which is the only stage regulated heavily by QQI, in each institute.

More internal process formality in Alpha: Alpha Institute has the least number of preliminary internal peer approval stages, yet we will see in chapter 5 that Alpha participants experience the most barriers in trying to get the new programme through the internal and external validation processes. Preliminary outline approval is provided early in the process, without as much internal iterative deliberation as exists in other institutes. In the other three IOTs, programme approval deliberations are shared with at least one school policy or planning committee, who provide iterative advice to the developers. This informal committee consultation stage does not exist in Alpha. Alpha differs from the other institutes in that it requires full documentation prepared early in the process,

forcing innovators to tie down the programme concept earlier in the development, without the prior benefit of committee deliberations with peers. Alpha is the only institute which specifies the requirement of a formal internal validation panel, though other institutes do avail of this mechanism, it is not obligatory in documented institute policy. This suggests that Alpha's is a more formal procedure. Academics pushing through creative developments are required to develop complete programme documentation before a formal peer review is undertaken. In other institutes, there is a lot more peer feedback and consultation before full programme documentation is produced.

Uniformity of documented external validation protocols: As QQI clearly specify the formal format of the external validation panel process, there is little documented variation in the external validation policies across the institutes. Table 4-2 below illustrates the external validation process standard across all institutes. All Institute manuals emphasise that validation panel members be external and independent to the institute. In addition, the Delta manual, details ethical obligations of assessors.

Different interpretations of registrar's role on validation panel: Alpha and Delta list the in-house registrar as a member of the panel who acts as secretary to the panel. Thus, the internal (local) registrar plays a dual role, as he is an internal agent, listed as panel secretary yet he also is required to act as a member of an external panel of independent evaluators.

NPDV institute policy specifies the norms and regulatory procedures, but what happens in practice may deviate greatly from these protocols. What happens in NPDV practice and how academics experience the practice of creativity in NPDV is followed up in greater detail in the next chapter.

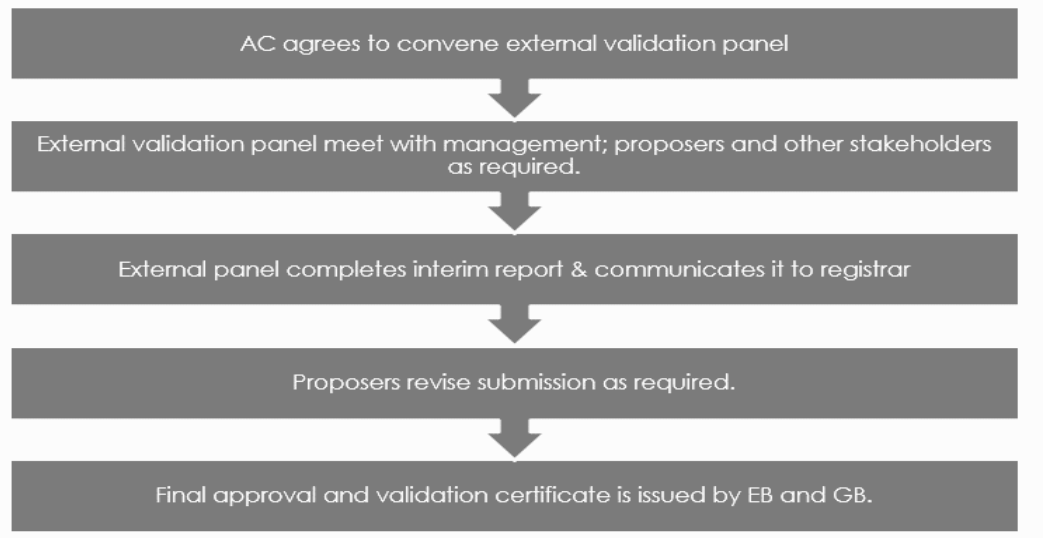


Table 4-2 External validation standard process flow

Thus, the NPDV process in all IOTs generally comprises three stages: outline approval; internal validation and external validation. All IOTs have control over the format of the first two stages, but the third stage of independent external validation, is closely specified by QQI. We have seen that in contrast to the process in Alpha, in Beta, Calypso and Delta much discussion takes place before energies are invested by proposers in detailed research and consultation and documentation development. NPDV policy protocol detail provided in Delta is more comprehensive than that provided in any of the other institutes.

Further, in Beta and Calypso there are a larger number of documented peer review and senior management interventions in the NPDV process than documents indicate in the other two institutes. This may indicate a greater level of control exerted over the process by senior management in these venues. The senior management role of the in-house registrar in NPDV is complex and I found it confusing as there appear to be conflicting loyalties in the role: The registrar is an internal agent of the institute and is listed as panel secretary, yet he is required in addition to act as a member of an “external panel of independent evaluators” (QQI, 2017).

4.6 Summary of chapter 4

This chapter addressed RQ1 and in part, RQ2. Though largely descriptive, it sets the scene for analytical interrogation of the interviews, to uncover the principal findings of this research study, which follow in the next chapter.

Findings in this chapter revealed the confidence participants have in their own individual and team skills for creativity and that they value creativity and innovation in their respective academic environments. Findings signalled that resilience, creativity, skill, insight and knowledge was required to bring new programme developments through the NPDV process, as it is challenging. Within the IOTs, we saw that internal validation policies differ, and that Delta stands out as the institute which provides more comprehensive process guidance than the other IOTs, in the detail and quality of its policy documentation. This would indicate to me that more value is placed on the NPDV process in this institute, than it is in the other institute. We will see if this argument is supported, in the next chapter when we examine how this process is supported in practice.

The NPDV process flows were outlined and we saw that there were differences between the institutes in the number of explicit peer and management interventions in the process before full documentation is developed, for the new programme. The policy review indicates to me that in Alpha, there is a more formal approach to validation policy and less peer consultation before innovators are required to tie the programme down to detail. Thus, in this institute, developers are left to their own devices to prepare the complex documentation for NPDV.

Finally, and paradoxically, the development of new programmes requires academics to be creative and innovative, yet the lengthy programme development process appears to be extremely time consuming and onerous. Though rigor in the process is vital, the process demands extensive consultations with numerous stakeholders and navigation of several regulatory procedures, in the main, with little evidence of detailed guidance or process training to assist or motivate the academic.

Employing the NPDV process as an instrument for observation, the following findings chapter presents the factors which have impact on respondents' creativity and innovation in professional practice.

5 Findings and discussion: three levels of factors

5.1 Introduction

This chapter sets out to uncover academics' lived experiences of bringing creative developments through the HE system, employing the NPDV process as the mechanism for observation. Findings in this chapter address the following questions:

> *RQ2: How is academic creativity and innovation supported in practice within current new programme development and validation practices (NPDV), in Irish IOTs?*
>
> *RQ3: What dimensions of the broader HE environment are perceived to hinder / foster academic creativity and innovation?*

Concepts presented in this chapter have emerged from 20 interviews conducted in 5 higher education institutes: four Institutes of Technology (IOTs) and one university. In addition, reference is also made to the documentary analyses of institute and state policy procedures where necessary. Unless otherwise stated, direct quotations presented in this chapter illustrate the dominant themes, perspectives and experiences of academics.

The four IOT venues are the predominant focus of this study. University respondents' views are highlighted where differences between the IOT and the university venue are significant or of note, and these are, in the main, limited to the provision of contrasting perspectives. The reason for not including the university perspective in every theme is that the university data gathered here relates to only one university venue, and an in-depth study of the climate for creativity and innovation in the universities is beyond the scope of this study. Furthermore, in comparison to the data gathered in the four IOT venues, Echo University data is not considered to be sufficient to draw general conclusions about the provision for creativity and innovation in the universities. It is for this reason that Echo university findings are not considered in greater depth in this chapter. It is recommended, however that further research should be undertaken to examine the climate for creativity and innovation within the universities.

Research themes grounded in the data were permitted to emerge, without reference in the first instance, to existing theories reviewed in this literature. This

procedure is consistent with the CGT research methodology used and detailed in Chapter 3. Findings from the first two rounds of interview coding were described in chapter 4. The third to fifth rounds of coding focused on active experiences, values, ideologies and beliefs of academics as they recounted how they developed and guided their new programme developments through institute systems. In the fourth and fifth round of coding and simultaneous data analysis, three key levels of factors having impact on academic creativity and innovation began to emerge distinctively from the data.

Academic creativity and innovation is impacted by factors at three levels at an individual / team level, at the level of the organisation and from outside the organisation. Respondents engaged in discussions related to their own personal motivations towards creativity as an individual and as a member of a team. They also referred to issues affecting academic creativity within the climate or environment they were working in, such as the kind of managerial support, the complexity of innovation related procedures, the availability of training or the kind of leadership provided in the organisation. A third category of issues also emerged, related to the impact (on academic creativity) of factors beyond their organisation, factors at state, EU and at a global level such as an increasingly globally competitive HE sector, industry demands and EU regulatory procedures. The influences of these factors outside the organisation, filtered down into the institution, shaping the climate for academic creativity and innovation within the IOT. These high-level factors are referred to in this study as meta-organisational factors. Table 5-1 illustrates the three categories which were explored at the fifth and final round of coding at individual/team, organisational and meta-organisational levels.

3 layers of multi-level factors having impact on academic creativity and innovation
Individual and Team level
Factors affecting creativity motivation of individuals
Emphasising importance of teamwork
Team demotivating factors (brick walls, consultation issue & workload inequity)
Organisational level
Supporting allocating resources to NPDV
NPDV process complexity & role confusion
Leadership - experiences of effective
Leadership - experiences of defective
Meta-organisational level
Governance and Control factors at macro level
Industry demands and consultation challenges
Reviewing market, programme demand & student demand

Table 5-1 Multi-level factors emerging from final coding rounds

Drawing from the experiences of academics in practice, this chapter employs the emergent category headings in Table 5-1 above as a guide to present the factors having impact on academic creativity at multiple levels. Findings are presented at three levels: Individual and team, organisational and meta-organisational.

5.2 Impact of individual / team level factors

In this section individual / team level factors are presented. The subcategories of factors affecting HE creativity at this level were developed further and include the creativity motivation; skill and expertise and resilience of participants and the important impact of teamwork.

5.2.1 The impact of participant expertise and skill

Within the research sample examined, the data indicates there is sufficient specialist expertise to initiate the creativity process. This argument is supported by respondents' acknowledgement of the presence of academic creative skills presented in the previous chapter, "there is no shortage of creativity (…)" (Teresa, lecturer, Alpha) and by the high level of specialist expertise among IOT academics inferred by sample characteristics, see below in Table 5-2. Participants in this study had, at the time of interview, an average professional role longevity of 11.45 years in addition to specialist expertise in their respective disciplines.

Domain relevant skill; role longevity and self-identified fields of expertise of research participants

Age	Gender	Length of Tenure	Location	Primary Discipline
45-55	Female	6-10 Years	C	Science
35-45	Female	5 Years	E	Law
55-65	Male	10-15	A	Science
45-55	Male	10-15	A	Technology
45-55	Male	10-15	A	Engineering
35-45	Female	10-15	D	Humanities
35-45	Male	6-10 Years	D	Education
45-55	Male	6-10 Years	E	Law
55-65	Male	15-20	E	Science
45-55	Female	10-15	C	Sports
45-55	Female	10-15	A	Technology
45-55	Female	6-10 Years	C	Business
45-55	Female	10-15	A	Technology
45-55	Male	10-15	C	Sports
25-35	Male	6-10 Years	C	Design
55-65	Female	15-20	B	Communications
45-55	Male	15-20	B	Social Science
35-45	Female	6-10 Years	B	Marketing
45-55	Male	10-15	B	Business
55-65	Male	10-15	A	Humanities

Table 5-2 Domain relevant skills, expertise and professions of respondents

In the academic press, individual factors acknowledged as conducive to a creative and innovative organisational climate include personal traits and a cognitive style supportive of creativity (Amabile, 2012). Several examples of individual cognitive factors contributing to creativity are evident in the findings. Teresa, a lecturer in Alpha, described how she herself and her team had to “throw the baby out with the bathwater”, and “start from scratch” (Teresa, Lecturer, Alpha) during the first phase of a new technology programme development. Similarly, Tara, Sal and Maria (Alpha, Calypso and Beta) described creative skills and abilities among the sample, they explained how they identify new trends and opportunities; synthesize information and do the hard work associated with generating effective novelty in the form of NPDV documentation, defence and validation. Sal described how she initiates programme development by getting staff to “think outside the box” (Sal, HOS Calypso) and how she does the hard work, systematically researching the market to identify trends and opportunities to be developed (Sal, HOS, Calypso). Across the board, participants described their involvement in cognitive processes for creativity and these examples demonstrated the resilience and discipline required for development of new

programmes of learning. These descriptions coincide with the literature, participants possess the "ability to go beyond perceptual and performance scripts" (Amabile 1988). No evidence is provided to suggest personal and team-based creativity relevant processes were limited. In fact, 4 references are made by academics to personal propensities towards creative and innovative endeavour. The ubiquitous presence of creativity among participants is consistent with the proposition presented in Chapter 2 referring to the existence of a universal *little c creativity*, which can be developed and is at the disposition of every individual (Csikszentmihalyi, 1997; Banaji, Burn and Buckingham, 2010; Carlile and Jordan, 2012; Florida, 2012).

5.2.2 The impact of intrinsic motivation and team synergy

The collective synergy created by working within a like-minded team is experienced as an important intrinsic motivator for academic creativity and innovation in NPDV. Several examples of intrinsic motivation emerged from the research data: the team work dynamic, the satisfaction of meeting the NPDV challenge and the intrinsic motivational reward of seeing students registered on the new programme of learning developed by the team are key motivators. According to Tara, intrinsic motivation to develop and persist through the NPDV process comes "definitely from [working with] the people around you" (Tara, Lecturer, Alpha). Working in a small team of likeminded and engaged individuals (Teresa, Lecturer, Alpha; David, Lecturer, Calypso) "that has a tight focus" (Anne, Lecturer, Calypso) will push the development through. The value of "a really good team" (Helen, HOS, Delta) is stressed, as "one individual can't do it" (Teresa, Lecturer, Alpha). Thus, the importance of collaborative teamwork and colleague support in NPDV is emphasised directly by 6 respondents and implicit in most respondents' portrayal of their NPDV experiences. Consistent with this finding, the literature emphasises the importance of intrinsic task motivation[18] among individuals and teams (Amabile, 2012; Amabile and Pratt, 2016).

[18] Amabile explains intrinsic task motivation as the passion or motivation which encourages one to undertake a task because it is personally challenging, satisfying or interesting. This intrinsic motivation is contrasted with the motivation provided by extrinsic reward, monitoring, competition, or fulfilment of task obligations (Amabile, 2012; Amabile and Pratt, 2016).

5.2.3 The impact of resilience and of challenge

Resilience and an ability to meet challenges are essential personal / team level attributes for success in the innovation process of NPDV. A double-edged sword, challenge appears to motivate and demotivate individuals. The NPDV process is regarded as particularly challenging by all IOT respondents, but less so by university respondents. Laura and Liam from the University venue experience the NPDV process in their university as less onerous than that of the participants in the IOTs. Proposers of innovative developments expose themselves to many difficult interactions with colleagues. Vulnerability to criticism is cited by three participants as a difficulty experienced while involved in NPDV. Teresa explains that when you are innovative in programme development

> *You are opening yourself, (which I've experienced as well), to being harassed for doing it, if it was something that somebody else didn't agree with (Teresa, Lecturer, Alpha).*

"Brick walls" (John, lecturer, Alpha) are encountered during this process and programme developers are "filleted" (Eric, HOD, Alphas) at validations, but to get there, they need to "kick open doors" and "scream" (Sam, HOS, Alpha) so that academic affairs put the new programme up on the CAO system. According to Clare, and consistent with Amabile (1988), the process requires resilient individuals who are "champions" (Clare, Lecturer, Beta) for the new programme. Sal suggests you need "quite a strong personality" not to let "anybody stand in the way" of a new development you can prove will attract students (Sal, HOS, Calypso). IOT respondents generally agree that individuals who "ignore the negatives that happen…[and] don't give up" (Sam, HOS, Alpha) and "push these things on" (Stephen, HOS, Beta) have success in new programme development and validation. Amabile (1988) identifies resilience as of significant importance in organisational creativity and innovation.

The intrinsic motivation of academics in the IOTs appears at times to be undermined by extrinsic demotivators in the work environment such as the workload inequity which arises when some work hard without reward on NPDV and others sit back and benefit; the lack of resource support and inhibiting management practices, these issues emerged in the research at the second level of factors impacting on creativity and innovation, at the level of the organisational or work environment.

5.3 Impact of organisational level factors

There are three subthemes at organisational level: leadership, NPDV Innovation process complexities, and resource allocation. Findings show that, in one IOT, Delta, leadership behaviours are more conducive to creativity and innovation than in the others. Under the organisational level theme of leadership, subcategories referenced include: Strategic direction; Risk aversity; Feeling blocked; Feeling trusted and Decision-making. Trust has significant resonance among respondents. Under the theme of NPDV innovation process complexity, subcategories include: the complexity of procedural formality and the management support provided to developers. A portrayal of an effective senior manager who is adept at NPDV is also included in this section. Under the theme of resource allocation, the lack of resource allocation to support NPDV, in all of the research venues is highlighted. In addition, the lack of extrinsic rewards for NPDV and the significant impact of a lack of training and formal orientation in the NPDV process is revealed.

Organisational level factors impacting on creativity and innovation are represented in Table 5-3 below. The table shows emergent subcategories taken directly from the final focused codes categorised in NVivo. All the NVivo Nodes at organisational level can be found in Appendix 5.

Name	Total sources = 20	References
Organisational level themes (all five research venues)	**20**	**663**
Supporting allocating resources to NPDV	19	63
NPDV process complexity & role confusion	20	372
Differing perceptions of roles on validation panels	8	45
Complexity of stakeholders' requirements of NPDV	18	157
Leadership - experiences of effective	14	105
Leadership - experiences of defective	18	123

Table 5-3 Emergent themes at organisational level in final coding round

The first sub heading shows that 19 out 20 respondents refer to resource allocation as having impact on academic creativity. The following three headings in Table 5-3 relate to the large number of references linked to NPDV process

complexity. The final two headings show that 18 of the 20 respondents experienced leadership strategy and practices inhibiting of academic C&I in NPDV, while 14 sources experienced effective leadership practice encouraging of creativity. We will see later that in one IOT (and in the university venue), leadership behaviours appear to be more conducive to creativity and innovation than in the other three IOTs. Delta institute and Echo university are places where respondents cite leadership direction as accepting of and conducive to academic creative initiative.

Serious concern was expressed at the lack of formal allocation of resources to the NPDV innovation process. It is evident from the multiple references to the lack of NPDV resource provision in the research data across all research venues that there are minimal resources allocated to this process. No formal strategic orientation or training is provided in any of the 5 HEIs for this process. It is a remarkable discovery, to find within higher educational institutions, that educators are not educated in the design of education and are left to figure it out for themselves. Respondents' experiences within these three subcategories at organisational level (Leadership strategies and behaviours; NPDV process complexity and the allocation of resources) are presented below.

5.3.1 Impact of leadership on motivation to create

An overview of the significant impact of leadership: Evidence is provided in the data that academic creativity and innovation in NPDV is strongly impacted by institute leadership. All 20 participants referred to the importance of effective leadership in providing the conditions for academic creativity and innovation. This finding coincides with the literature. According to Amabile (2012), creativity and innovation need supportive management and creativity encouraging systems and vision. Leaders influence the extent to which trust, collegial regard and mutual respect; openness and transparency exists in the organisational culture. They can provide encouragement for creative initiatives and strategic direction for innovation. One third of data references related to organisational conditions impacting on creativity and innovation, (228 direct references out of a total of 663, see Table 5-3 above) relate to the impact of leadership behaviours. Participants believe leadership has significant impact, they claim that an organisational culture supportive of creativity and innovation really comes down to the "key individuals that are at the top", they believe the institute president must "lead out and provide

a culture of innovation" (Len, HOD, Delta). Their views indicate that a culture beneficial to NPDV innovation is generated by leaders who successfully employ the tools of trust; decision making transparency; consultation; support and strategic direction. Participants spoke of the benefits of trust in professionalism of staff and how they were demotivated when they felt mistrusted or felt their own specialised domain expertise was overlooked. They referenced the beneficial impact of decisiveness in decision making; decision making coherence, clarity and communication; consistent and valued consultation with staff involved in programme development and the freedom to voice opinions.

Leadership impact on creativity was referenced by respondents under the themes: Strategic direction; Risk aversity; Feeling blocked; Feeling trusted and Decision-making. The expression of their experiences is detailed below.

The impact of a lack of strategic direction by leaders: No formally assigned strategic responsibility was found, within any of the research venues, allocated to identifying and communicating strategic responses to emerging environmental trends to advise and support staff in NPDV. The absence of strategic direction and resources for innovation in NPDV has significant impact on the time and ability of academics to orientate future developments to the needs of students, workplaces and society. Ideas are generated from multiple sources, but though some informal direction was acknowledged, no formally assigned responsibility has been allocated at a strategic level for identification of new student needs and innovative new directions. The absence of strategic direction for innovation is inconsistent with the emphasis in the literature on the promotion of a climate for creativity and innovation in HE. We saw earlier in the literature review that the Irish HE strategy document, *The Hunt Report* calls for HE to position itself as a central player in the development of Ireland's culture of innovation (Hunt, 2011). This strategic deficit finding is consistent with the 2011 EC report which states that: "Curricula are often slow to respond to changing needs in the wider economy and fail to anticipate or help shape the careers of tomorrow" (European Commission 2011, 4).

The impact of risk averse leadership: In 3 of the IOTs, respondents claim leaders are highly risk averse in relation to curriculum development. In these venues, great prudency is required when attempting to introduce innovative new

programmes to the IOT environment. Five academics make specific reference to the fact that radical innovations are not readily acceptable (Teresa and Tara Lecturers in Alpha; Stephen, HOS, Beta and Shane and Sal, Lecturer and HOS, Calypso). Shane explains developments must be tailored to the acceptable level because:

> *Creative thinking almost has an instant rejection, because it means stepping outside of what people are comfortable with (Shane, Lecturer, Calypso).*

Thus, to convince others (particularly senior management) innovations need to be appropriately packaged, according to Stephen:

> *It is important when bringing new developments to the executive board that you know how to package ideas and that you know how far you can go and how you can wrap things up and package them in certain ways (Stephen, HOS, Beta).*

The impact of feeling blocked by leaders: Frustration is experienced in a climate where excessively trying obstacles are put in place of NPDV. This is referenced in three out of the four IOTs: Alpha, Beta and Calypso. During the innovation process, Teresa felt "stuck in that rut" (Teresa, Lecturer, Alpha) and Tim described how he felt unable to "breach that line" (Tim, HOS, Alpha). Unlike the other IOTs, overly negative obstruction experiences are not expressed by Delta respondents. However, adverse experiences of a culture which obstructs innovation resonate strongly in Alpha. This topic surfaces again in relation to NPDV complexity and will be examined further below. The following paragraph deals with concerns raised in relation to the concept of trust.

The impact of feeling trusted by leaders: Creativity flourishes within an IOT climate of trust and collegial respect. Trust is an important issue for participants in this study and experiences of trust vary across the HEIs examined. This concept emerges in relation to respondents' experiences of senior management regard for programme developers' domain expertise and professional judgement. 9 out of the 20 participants referred to a perceived lack of trust invested in them by senior management, which they claim demotivates and dampens their enthusiasm to be creative and innovative in NPDV. This is one theme where divergence is evident across the institutes. Research indicates that trust, openness, supervisory encouragement, freedom and participative safety play a significant role in creativity stimulation (Ekvall, 1997; Anderson and West, 1998;

Amabile, 2012). The positive effects of a leadership culture of openness, trust and transparency on creativity is evident in Delta. Helen and Len explain that collegial regard and mutual respect amongst staff in the institute, has been established by the president of the Institute, who actively respects the voices of staff: “now your voice is respected” (Len, HOD, Delta). There is a “great culture of openness and transparency in the institute” (Helen, HOS, Delta). Len attributes the growth of this trust culture to the president, and that this has resulted in greater intrinsic motivation of individuals in his workplace:

> *Even if the president doesn’t support it herself, she is willing to go with it for the better good. So, that has led to a lot more creativity and a great sense of openness and even transparency. [...] it really comes down to the key leadership and management skills that are set from the top and that has a massive impact (Len, HOD, Delta).*

In Beta, there also appears to be a climate of healthy collegial respect, though this has been relatively recently established. Maria (Lecturer, Beta) explains that there used to be a serious lack of trust in the Institute. She describes how there were random audits of lecture rooms to check on lecturers and that this stifled creativity in lecturing activity as you could not use a non-timetabled venue at random to suit what you were teaching. Maria explained that this lack of trust, “really irritated people and made them engage less”. (Of note in Beta, is that 3 out of 4 academics interviewed referred to a lack of trust in the wider IOT sector beyond the organisation). The references to increasing restrictive controls on academics, are mirrored in the literature (Moutsios, 2013).

In Echo university, findings indicate that there is a high level of inter-collegial trust and freedom to innovate invested in staff by the institute leaders. Trust is linked to respect and “respect for collegial professional expertise is the norm in the universities” according to Liam (Lecturer, Echo), Ian (Senior Manager, Echo) supports his assertion:

> *I had free rein when I started here, I came in as a senior lecturer and was told I could do whatever I want which was great (Laura, Lecturer, Echo).*
>
> *(There is) very great freedom to do whatever you want and most [lecturers] would be changing some elements of the course year-on-year (Ian, SM, Echo).*

There is a marked contrast between Echo university system and the IOT system in how an academics’ personal credibility holds weight in programme validation.

Echo university executive trusts lecturing staff to propose and engage directly with specialists in the domain for programme validation and staff are trusted to feed this back to the relevant internal Executive Board (EB) and programmes committees. In the IOT system, however, it is the panel of expert examiners who are allocated the task of scrutinising a proposal to validate its academic credibility. IOT programme developers are not permitted to interact with the panel before the validation. Liam explains that proposers' qualifications, expertise and experience are what add credibility to new programme proposals in the University. In the university, Liam feels trusted as a professional in his field of expertise, and he does not feel he must prove himself before the proposal is considered. The university NPDV system trusts development staff to consult directly with external validators in relation to programme approval and faithfully present the outcome to the board:

> *Bear in mind that when you go to faculty and academic council, there is no one from your department who has the expertise you have. So, they are limited in how they can challenge you, particularly when you have [external examiners selected by the proposers behind you], […] faculty is limited [they are from different disciplines] as to how they can challenge the substance of your program (Liam, Lecturer, Echo).*

In contrast, Sal, (HOS, Calypso) seems to have to prove not only the viability of the programme proposed but also proof of her professional expertise to the EB before the new programme gets a proper hearing:

> *[Because I had presented a previous programme and it had been successful] they knew that [because of that] obviously, I knew what I was talking about. Then it was easier the next time round, but it did take a couple of weeks to get their head around this very new programme, this course (Sal, HOS, Calypso, on convincing executive board and academic council).*

In Alpha, however, the effects of a culture of distrust strongly resonate with participants. John (Lecturer, Alpha), feels mistrusted. He feels his personal freedom is controlled in a workplace where "constraints are imposed too harshly". He describes his experiences of the lack of trust in his workplace as:

> *A paranoia by those at the top, there was a fear that if they did not stay in control people would constantly go off and do criminal or unsavoury or unethical acts (John, Lecturer, Alpha).*

The levels of distrust experienced by John in Alpha, is suggestive of a culture in Alpha inimical to creativity and innovation in this institute.

The impact of leadership decision-making: The “lack of coherence” (Tim, HOD, Alpha) of decision-making has a demoralising impact on staff, impacting on creative impetus. According to Sal, when decisions are communicated clearly, academics know what creative initiatives will “fly” (Sal, HOS, Calypso) and which will be blocked. This prevents excessive energy-wasting on unsupported programme development. In Alpha and Calypso, respondents voiced frustration at the lack of clarity and coherence in internal senior management decision making processes. This lack of clarity caused undue delay in programme validation and frustration for staff. In both these institutes, respondents experienced how, during the NPDV process, senior management “moved the goalposts” (Shane, lecturer, Calypso), reversing and altering parameters of approval and decisions already made. It left staff feeling “let down and frustrated” (Tim, HOD, Alpha).

> *The goal posts were moving around a bit because our HOD and our HOS were giving directions which were not necessarily right, as a result it caused enormous problems. That process creates a lot of fatigue (Shane, Lecturer, Calypso).*

Conversely, regardless of the final outcome of the NPDV development, when decisions were clear, and refusals came early in the NPDV process, it did not cause as much concern for staff. Staff understood why, and they did not waste time on programme development which was not going to be approved. Consistent with the policies documented in Chapter 4 showing iterative peer review consultations at an early stage, respondents in Delta and Beta noted that decisions are made early in the NPDV process in their institutes:

> *80% of proposals go through senior management. The other 20 are put on hold, for more information or are outright refused so that’s usually at that stage, the earlier stage, where the refusal happens (Len, HOD, Delta).*

Where senior academic leaders made decisions about the proposed new programme without consultation, staff felt demotivated and a sense of frustration. Shane (lecturer, Calypso) explained how proposals “magically disappeared off”, went “away to the unknown” and “word came back” that the programme had a new title and a change of focus and the development team felt the sense of “ownership was lost” over the programme. His views were corroborated by his colleagues David & Anne, in Calypso. This institute was relatively unique in this

respect, in the other institutes, there was more of a sense of staff input into the NPDV decision-making process.

Comparing leadership across the IOTs: A comparison in leadership behaviours across institutes show that the total number of sources quoting effective leadership behaviours is lower in Alpha than in the three other institutes (see 5-1 below).

The data in the following Figures 5-1 and 5-2 has been normalised to account for the differences in the number of respondents interviewed in each of the institutes. (The total number of references from each IOT has been divided by the number of sources from each venue). The overarching objective, however, is not to critique any one institute but to highlight the generic and most prominent concerns in relation to leadership behaviours conducive or otherwise of creativity and innovation in NPDV.

Figure 5-1 below shows that Calypso performs exceptionally well in terms of references to positive leadership behaviours. This trend is disproportionate due to the fact that in one interview, one Calypso HOS interviewed, performed exceptionally highly in terms of leadership supports and behaviours conducive to creativity and innovation than other institute leaders. If we checked Figure 5-1 for this, we would find that, Delta has still got the largest number of references to leadership behaviours contributing positively towards academic creativity and innovation in NPDV, in particular, a considerably higher number of references are made to how the leaders in Delta respect staff professionalism. Consistent across all the leadership references, Delta institute appears to be doing some things right when it comes to a culture supportive of academic creativity and innovation in NPDV. Though not included in this analysis, (given the primary focus of this study on the IOT climate, and that there is only one university venue to draw conclusions from), it is interesting to note that a culture of trust, participative safety and collegial respect is also evident in Echo university.

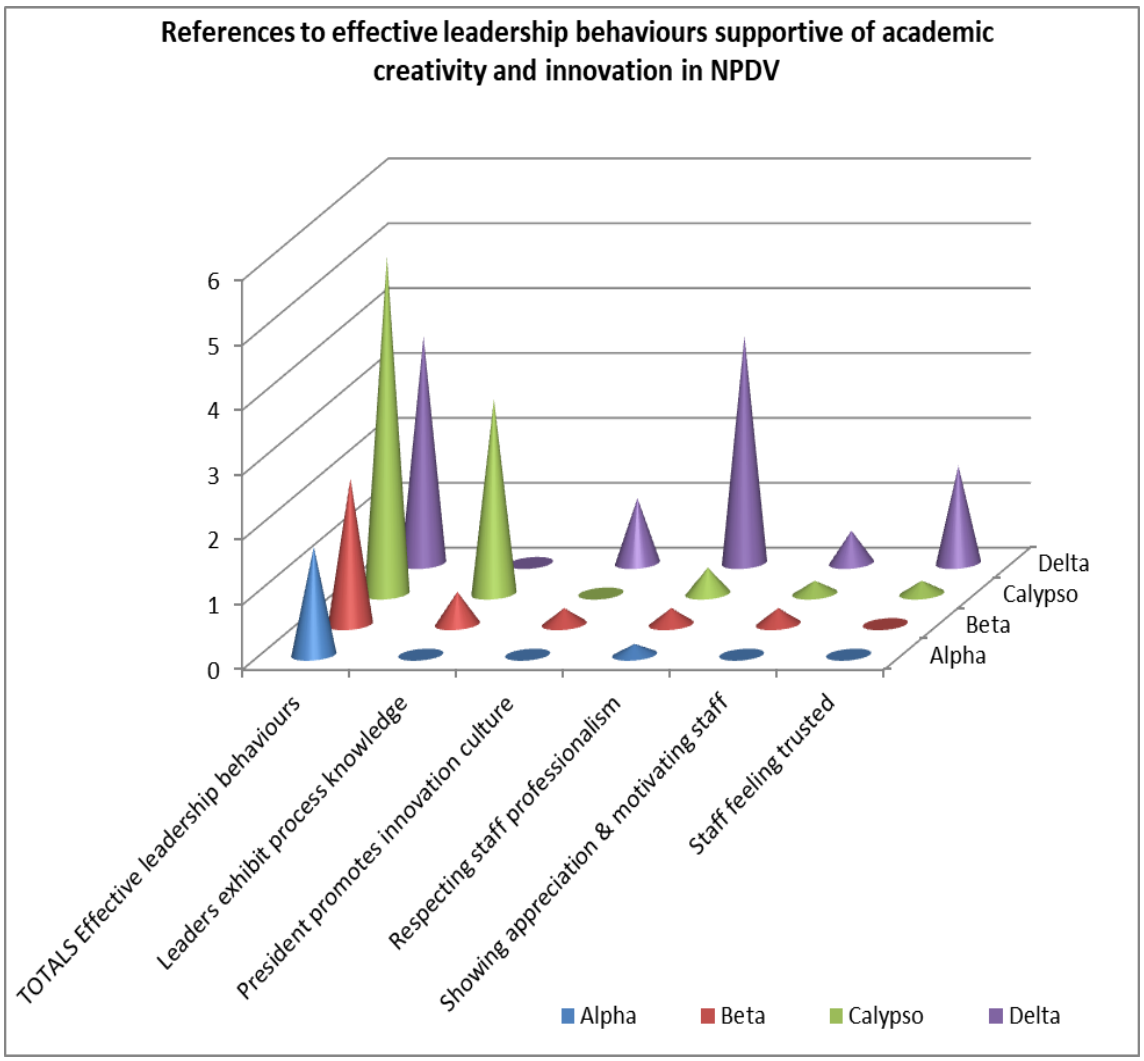


Figure 5-1 References to leadership behaviours conducive to creativity and innovation in NPDV

In the research venues where academics felt mistrusted, where they experienced their expertise being called into question and their professionalism undermined by senior management, they felt undervalued, demotivated, and less inclined towards creative practice. This finding is consistent with the literature which indicates that an appropriate balance of freedom and restraint is encouraging of organisational creativity and innovation (Amabile, 2012). Fig. 5-2 below illustrates the references by research site to experiences of leadership behaviours prejudicial to academic creativity and innovation in NPDV.

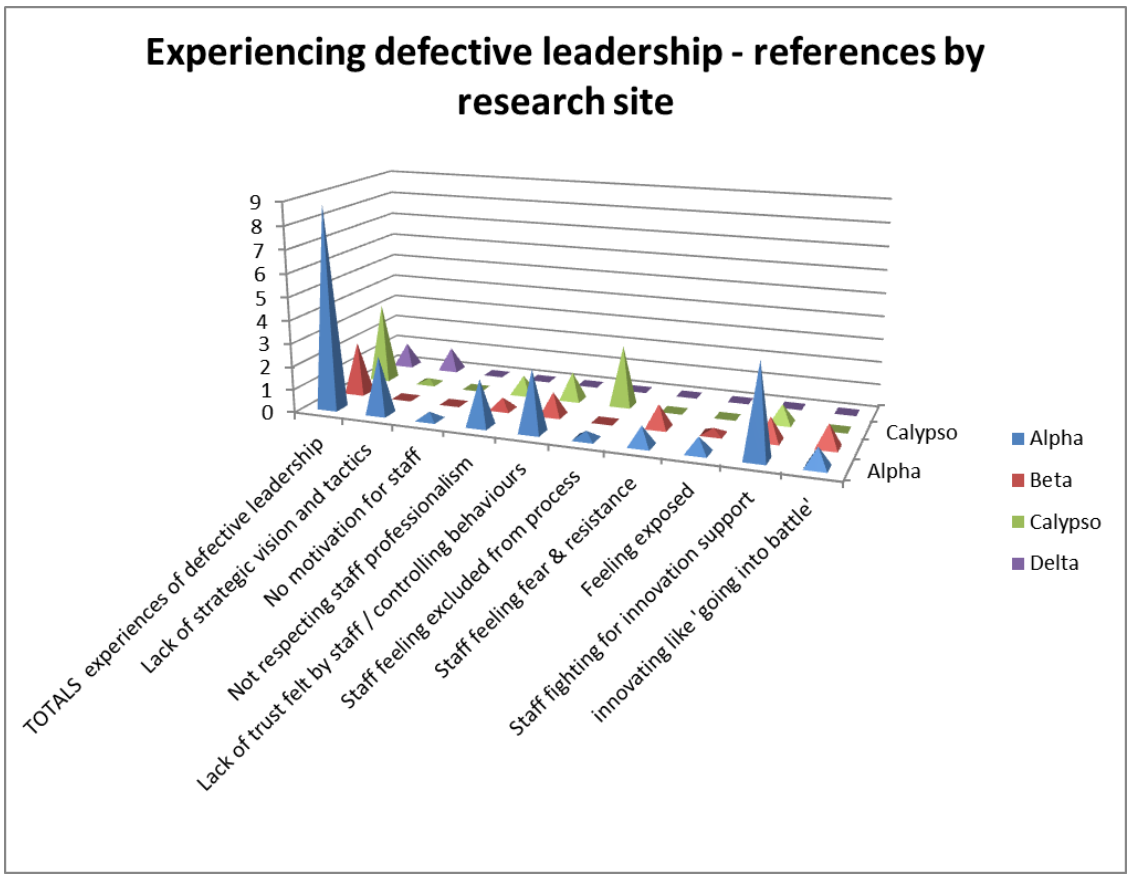


Figure 5-2 References to leadership behaviours prejudicial to creativity and innovation in NPDV

The data in Figure 5-2 above has been normalised to account for the differences in respondent numbers (Alpha: 6; Delta: 4; Calypso: 5; Delta: 2). Yet despite averaging out the values, we can still see that Alpha institute (the front line in Figure 5-2) has the highest number of total references, indicating that the leadership culture in this institute is experienced by research participants, as inhibiting of creativity and innovation in NPDV. Having identified how Alpha differed from other institutes during early interviews, I did interview further staff in this institute to ensure there were no weaknesses or prejudices in this portrayal of this institute. The later interviews further corroborated the emergent trends in Alpha. Staff interviewed in Alpha explained how they had to fight for leadership innovation support and this is the institute where respondents' experiences highlight most difficulties bringing new programmes through NPDV. Here, staff feel controlled and feel that management trust them less and feel their professionalism is undermined in the NPDV process. We can also observe from figure 5-2 that in Calypso, participants feel more excluded from involvement in NPDV process decision-making than in other IOTs.

Conversely, in Delta, participants feel more trusted and less excluded from decision making by senior management within the NPDV process, than academics interviewed in other institutes. The highest number of references in four categories of leadership behaviours conducive to academic creativity and innovation are referenced in Delta institute. This research data strongly indicates that, in Delta, there is a positive environment which is contributing to academic creativity and innovation in NPDV. Having examined the impact of leadership, the second emergent subtheme having impact on academic creativity and innovation in the NPDV process at organisational level is NPDV process complexity.

5.3.2 The impact of NPDV process complexities

Overview of the complexities: The second subtheme at organisational level which emerged from the data is NPDV innovation process complexity. References presented here relate to management innovation support practices and stipulated procedures in the IOTs which have impact on academic creativity and innovation in NPDV. Respondents noted procedural challenges with the NPDV innovation process. They found regulatory formalities and practice stipulations difficult to navigate and they identified a need for more support from management. Furthermore, academics highlighted the confusion generated by various interpretations of the roles and responsibilities of those senior managers involved in regulating the new programme validation process. The role of the internal registrar created considerable confusion, as several interpretations of his/her responsibilities regarding NPDV were uncovered. Middle management expertise in and support for, those navigating the NPDV process was also discussed and a portrayal of one effective manager for innovation is presented. Thus, in this second organisational level subtheme, we look at NPDV procedural formalities and the supporting innovation management practices and how these impact on academic freedom / restraint in relation to involvement in creative new programme development.

The impact of NPDV procedural complexities: The level of complexity involved in programme development makes the process difficult to navigate. Table 5-4 below illustrates fourteen of the many demands made; issues to be considered and procedural formalities to be negotiated within the NPDV process in Irish IOTs.

New programme developers must try to ensure they are:
• Meeting Industry needs
• Negotiating bureaucratic barriers
• Meeting professional associations' needs
• Checking for staffing availability
• Complying with state employment thresholds
• Convincing management (Getting Executive Board approval)
• Complying with quality standards (institute, state, EU)
• Considering CAO regulations
• Not triggering colleagues' fears of future with their proposed changes (redeployment concerns)
• Considering outcomes of programmatic review
• Considering / matching competitive pressures
• Ensuring they are not cannibalising students from existing courses (eating own market)
• Considering the future needs of the graduate and undergraduate student needs
• Complying with college standards and norms

Table 5-4 Complexity of demands of the NPDV process in Irish IOTs

The information in the table above relates to the number and diversity of stakeholders who must be consulted and the variety of issues which must be navigated in NPDV. Grounded in the data, this detail emerged from the analysis of respondents' experiences. We can see from the number of issues involved that a lot of time and effort is required to navigate this process. In fact, there are also a lot of tacit skills and knowledge required to conduct the consultations and understand the policies which regulate the process. Therefore, it is no surprise that academics find it a difficult challenge, to push through new programmes. It is clear that the procedures attached to this process are onerous and time consuming. Furthermore, as Table 5-4 above and Figure 5-3 below show, respondents experience a significant number of bureaucratic barriers in the innovation process of NPDV.

According to Amabile, to encourage workplace creativity and innovation, goalsetting should be tight at vision level, but organisational systems should be loose in procedural formality (Amabile, 1988). The findings illustrated in Figure 5-

3 and Table 5-4 show that loose procedural formality is not the norm in the IOTs. In fact, the opposite is violently obvious, particularly in Alpha: In the NPDV process in Alpha, doors have to be kicked open as they “might be slammed in your face” (Sam, HOS, Alpha). Middle managers and lecturers, Teresa, Tara, John, Tim and Sam experienced what they described as: excessively critical repeated internal validation practices. Developers are required to tackle “a lot of hurdles” (Tim, HOS, Alpha), in the process they “run into brick walls” (John, Lecturer, A) and validation is like going “into battle” (Teresa, Lecture, Alpha).

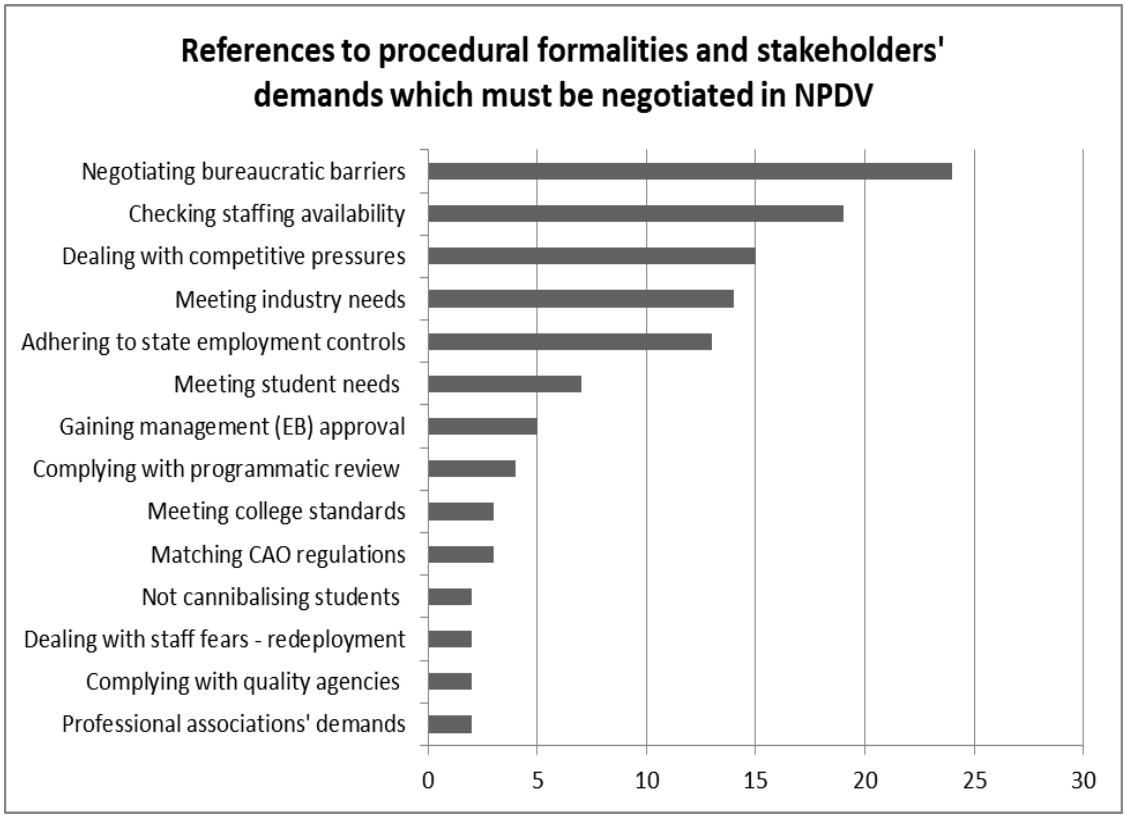


Figure 5-3 References to procedural formalities of the NPDV process

The impact of management innovation support skills for NPDV: Evidence of innovation management skills, in relation to the practice of NPDV, across the research venues is limited. There was just one management expert identified across all research venues in this area. Earlier, a reference was made to one salient manager in Calypso, who skewed the trends positively as evidenced in Figure 5-1. Sal is a senior manager in Calypso, prominent in the study for her skills, knowledge and staff support, in the practice and policy of NPDV. Management mastery of the NPDV process across the institutes was difficult to substantiate elsewhere. Sal had been involved in several validations in her capacity as HOS and in three different HEIs she worked in. Student enrolment

statistics demonstrate the success of her programme development and validation initiatives. Sal explained in the interview how her efforts reap rewards: She researches the market extensively, identifies student enrolment trends and leverages the available skills and experience of academics to tailor new developments to the market. Navigating validation, she explains how she has faced opposition to programme developments but, as she would have "done her homework" and would know more about the market than anyone else, she is able to push it through. She is systematic in her approach and creative in the manner she goes about re-engineering existing programmes and employing internal skill sets. She provides a creative energy and strategic direction in NPDV. Sal (HOS, Calypso) describes how "there is a lot of convincing to be done throughout the NPDV process", sometimes she must lead the executive boards by their "hands through the process". Her level of demonstrable competencies was not replicated elsewhere in this study.

Despite Sal's structured and strategic approach to NPDV, the other participants (they are from different academic disciplines to Sal) from Calypso describe their experience of navigating the process as extremely difficult, they experienced management practice inhibiting of creative NPDV. Decisions were delayed by management and "goal posts moved" frequently, wasting time of developers (Anne, Shane and David, Lecturers, Calypso). The appropriate balance between freedom and restraint to support creativity referenced by Amabile (1988) is not felt by respondents in these institutes. Controlling behaviours are indicative of an organisational climate where there is a deficiency of inter-collegial trust.

Several other academic managers interviewed explained how they do not have the time, and in some cases, they do not have the procedural understanding, to support programme developers. Expertise and understanding are gained with years of experience, as procedural training is not evident in any institute examined. NPDV procedure navigation is challenging and management is not always best equipped to support the developments. In fact, further difficulty and confusion is generated by a lack of senior management role clarity within the NPDV process. QQI regulations require the registrar to be neutral and guidelines state the following regarding validation panel members:

> *Evaluators will be objective and independent of the programme and its providers e.g. free of conflicting interests* (QQI, 2017)*.*

Respondents explained their experiences of the internal registrar's role in the NPDV process. In some instances, respondents perceived the registrar's input as constituting a barrier to academic creativity and innovation in the process (Tim, Tara, Teresa, lecturers in Alpha). In contrast, an interesting perspective is provided by Liam in Echo University who sees the registrar's role as purposely conservative: that of "steadying the ship".

There was evidence of confusion around the perceptions of the role of the internal registrar on the validation panel. Some academics believed the registrar's position was to have an active role on the validation panels and contest his /her proposing colleagues on the validation day; others believed he or she should be supportive of the new programme and defend it alongside the proposers. Yet others believed the registrar's role was limited to that of secretary to record the event. As a result, programme developers did not know what to expect from their own colleague on validation day. Perceptions in the IOTs conflicted. Table 5-5 below shows the nodes taken directly from the NVivo database, illustrating the varying perceptions of the different roles of registrar and other roles on the validation panel. This lack of role clarity creates confusion as panel members originate from different IOTs and universities and there are also representatives from industry, and if everyone arrives with a different perception of the people who regulate the process, and if the developers do not know on which side the registrar is on, this could make for a very confusing process, in addition to inherent complexities already outlined. I will recommend that at national level, this role is clarified. This process is clearly a challenging one, and one which management themselves do not appear to be adequately equipped for, in terms of understanding their roles.

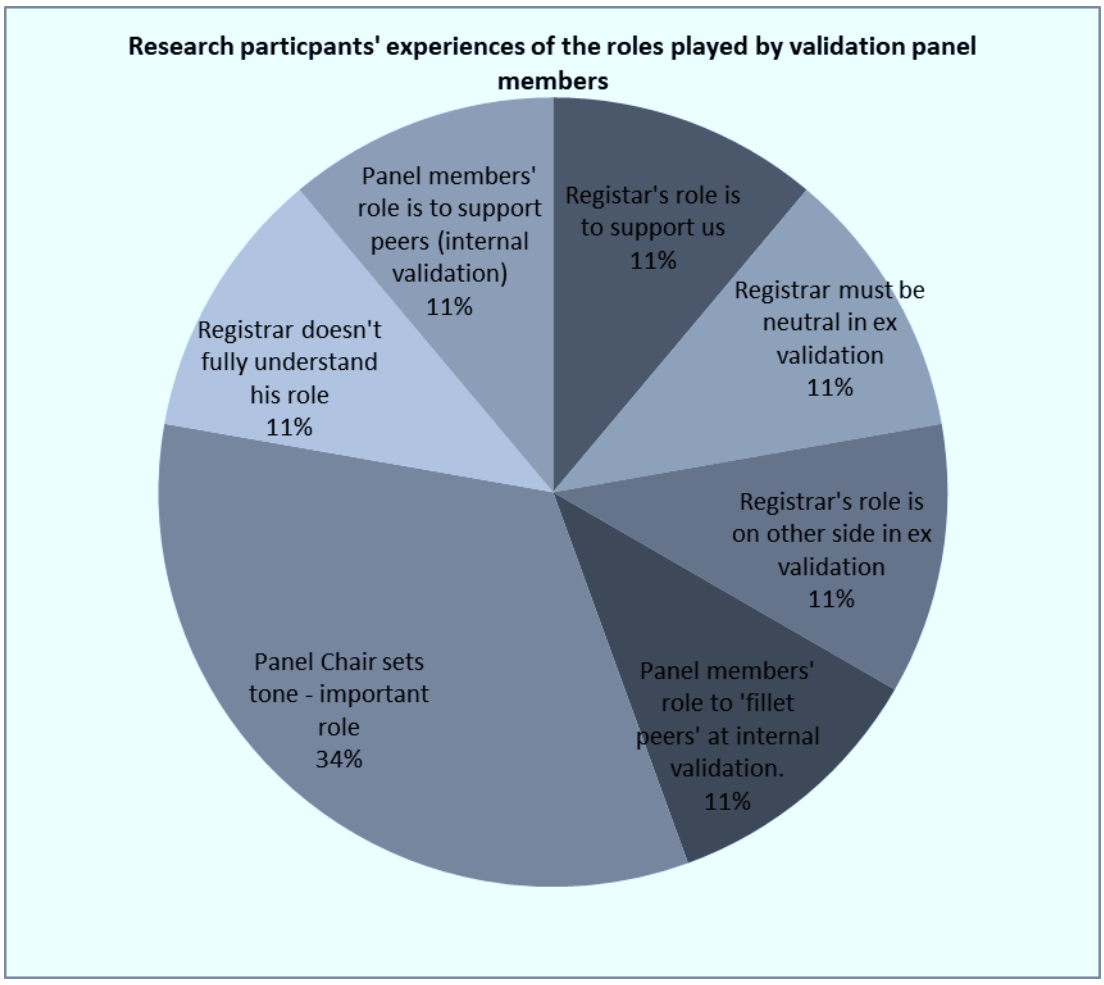


Table 5-5 Confusion generated by lack of role clarity in validation process

Creativity and innovation need supportive management and creativity encouraging systems and vision (Amabile 2012). Obscure professional responsibilities and roles, procedural complexities and lack of management guidance constitute process parameters which do not encourage the involvement of academics in creative endeavour.

The next and final factor subset grounded in the data relating to organisational level factors follows. This section emerged from participant references to the allocation of resources to NPDV.

5.3.3 The impact of resource allocation deficits

Overview of resource allocation: Remarkably, findings reveal that none of the institutes formally allocate time or resources to the lengthy programme development process within NPDV. Across all HEIs examined, respondents emphasised that resources were required to support academic creativity and innovation in NPDV. The lack of resource allocation to this process is remarkable,

given the workload and process complexities outlined in the previous section in this chapter. Where management perceive there is potential value, resources are generally allocated. From the scarcity of resources allocated to NPDV, we can infer that the curriculum development innovation process, NPDV, is undervalued in the IOTs. In fact, the only remuneration / time allocation recognition provided during NPDV is to cover expenses and time spent on assessment by the visiting external validation panel at the final stage of the process. No resources are allocated to support academic developers despite strong expressions of the commitment required by the process. Teresa explains: ‘‘I didn’t take a lunch break for two years” (Teresa, Lecturer, Alpha). To illustrate the workload attached to the process, she described one external validation panellist’s comment on the requisite documentation she prepared for the final validation process, as “akin to that required of a PhD candidate”. Figure 5-4 below illustrates the resource allocation needs highlighted as problematic by respondents, these include time (no hour allocation), strategic direction, need for training and need to provide support for management in innovation practice.

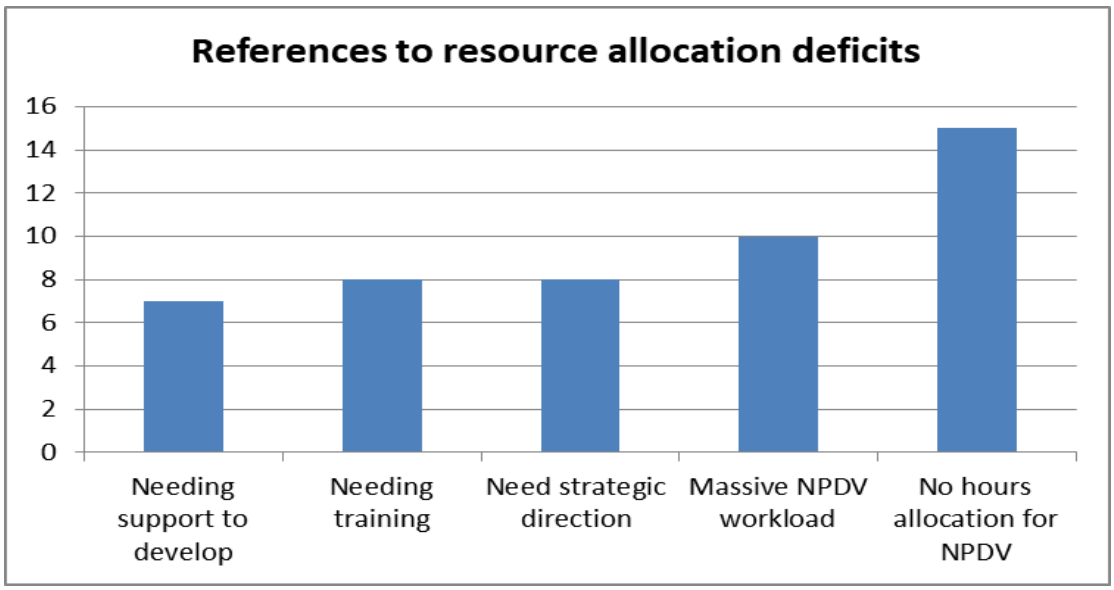


Figure 5-4 Reference to resource allocation deficits in NPDV

Across all venues, there are numerous references to NPDV resource deficiencies. There is no formal recognition of the allocation of time to academic schedules for NPDV despite the heavy process workload involved, in any of the institutes. Furthermore, we have already outlined, that no resource has been allocated at senior management level in any of the IOTs examined, to develop a vision or

formal strategic direction of NPDV process. Also highlighted earlier, the table also shows the lack of NPDV process support and training provision for IOT staff.

The impact of a lack of allocation to management for innovation support: Resource allocation in relation to management support for developers was discussed earlier. Middle management support for developers throughout the NPDV process is highly valued by participants, and some incidences of support are referenced in Calypso, Delta and Beta. However, there are no administrative resources explicitly provided to middle management in the compilation of documentation for NPDV, nor is there formal recognition of success in NPDV in any of the institutes. Echoing new public management controls from the literature, HOD Tony is exhausted by the endless administrative demands on his time, permitting him little time for creative processes:

> *In the sector, all over like, now it's about KPIs [key performance indicators] and now the time you should be creative is spent producing spreadsheets to justify positions that shouldn't need justifying and doing mundane stuff that is of no real consequence (Tony, HOD, Beta).*

Although, participants generally agree that the HOD provides some valued support to the programme development team during the NPDV process, the degree and level of support provided differs in practice, some managers providing more support than others. We saw earlier that Sal (HOS, Calypso) has proven innovation management skills and provides support to staff in her institute. However, Sal's level of NPDV expertise and success record in NPDV was not replicated elsewhere in the data, nor was it recognised formally in her own institute. Sal appeared to undertake this responsibility herself and excel at it. There does not appear to be innovation support provided for management in any of the IOTs examined.

The impact of a lack of extrinsic rewards: The NPDV process is onerous yet there are no formal monetary rewards nor is there time in lieu; or any other extrinsic driver built into the organisational systems of any of the institutes to acknowledge the time academics dedicate to developing new programmes. 10 out of the 21 academics interviewed, express concern in this regard. No timetabling hours are formally allocated to NPDV in any of the IOTs examined. Paradoxically, the time invested by those who judge the validity of the new programme, is acknowledged in monetary terms. Thus, extrinsic motivators for NPDV are absent. Teresa

(Lecturer, Alpha) explains there was “no [extrinsic] return, there is no reward” and there was “no recognition at the end” for the work the individuals and the teams put in to the NPDV process. These comments are reflected across the board. Here, there is no extrinsic incentive to be creative and innovative, there is no formal recognition or reward.

The impact of the innovation process training deficit: No formal training is provided for the NPDV process in any of the HEIs examined. 17 of the 20 respondents interviewed, identify the need for training in the NPDV process in their institutes. They acknowledge their own lack of experience and skills deficits when it comes to understanding and navigating the NPDV process. Few participants are confident in this regard: Three participants in Beta say they understand how the process works but the remaining respondents appear to have learnt, through trial and error and experience, how to manage the complexities involved. Acknowledging NPDV process complexity, participants recommend formal support and resource allocation to NPDV. In this regard, Breda’s account of her first experience presiding over validation as a new Head of Department in Calypso is alarming:

> *We do not get any formal training in the academic processes of the job. We are supposed to know what to do and how to lead the team through the new programme development process, yet we do not get any training in the process. When I became HOD, I had no training in how to lead out on programme development, and I was lucky in that, [and please make this anonymous], that the head of the validation panel gave me a lot of support in my first outing as defending HOD in front of a validation panel. I [feeling almost embarrassed] had not been through that many panels and I had not gone through the process, so that chair of that panel helped me greatly. Though perhaps it is not what he is supposed to do (Breda, HOD, Calypso).*

In a higher education environment where the aim is to promote learning, feeling unable to admit to not knowing how the process works is more alarming than the lack of training in the process itself. Breda had no induction training related to NPDV and that she felt she should have had and was embarrassed about her lack of knowledge in the area. There is no evidence of any formal training provided in any of the research venues to assist with programme development.

This paragraph sums up this detailed presented of factors we have just reviewed, which emerged from the data as having impact on academic creativity and

innovation at organisational level. We have just evaluated the impact of the following three subthemes at organisational level:

i. Leadership factors

ii. NPDV innovation process complexity

iii. Resource allocation

We can infer that, due to the significant challenges experienced by respondents in relation to these subthemes, academics in this climate would have significant difficulty sustaining the motivation to engage in NPDV. There is a lack of strategic focus on the NPDV innovation process inside the IOTs, and a lack of value placed on respondents' time and effort in NPDV. Policies promote creativity and innovation, but it is evident that practices in the IOT do not, if the observation lens of NPDV is capturing a transferable picture of the climate for creativity and innovation inside the IOTs.

Findings at a third, and final level have emerged in this research. At meta-organisational level (State, EU and global level factors outside the organisation) there are factors identified by participants as having extensive impact on academic creativity and innovation. These factors originate outside the public sector HEIs under research and are dealt with next.

5.4 Impact of meta-organisational level factors

Overview: Respondents experience industry demands and consultation challenges; governance and control mechanisms at state level and competitive and market demands, having impact on creative academic practice in curriculum development. In the literature, several HE writers claim these meta-organisational factors and political and economic pressures currently impact negatively on academic creativity and innovation (Harvey, 2004; Keeling, 2006; Moutsios, 2013). Findings in this study strongly correlate.

Commercially orientated and privately-owned organisations tend to have more internal control over decision making than public sector organisations. The Irish public sector higher education organisations in this study answer to public stakeholders, professional associations and government bodies external to the

institution. In addition, they adhere to European directives and standards. Thus, in these organisations, many of the contemporary control mechanisms which influence creativity, lie outside of the organisation. Academics in this research refer to several of these. Table 5-6 below illustrates the final focused coding nodes referring to meta-organisational themes [taken directly from the NVivo database in this study]. The three most referenced categories are highlighted in Table 5-6 Numbers of references in the right-hand column show the most frequently referenced themes impacting on their creativity at this level to be: Governance and Control at state level (14 respondents and 42 references). Industry demands and consultation challenges (14 respondents and 25 references) and market demands (14 respondents and 25 references).

Emergent themes at meta-organisational level (all venues)	Sources	References
Meta-organisational forces - totals	18	80
Reviewing market, programme demand & student demand	7	13
Industry demands and consultation challenges	14	25
Professional associations restraining creativity	3	3
Industry pressure - we can't just be serving industry needs	5	10
Convincing industry panellists	2	2
Industry consultation is ineffective, a 'ticking box exercise'	7	8
Industry consultation is effective	1	1
Actively involving industry biggest challenge in process	2	3
Governance and Control at macro level (national level)	14	42
Quality agency control (QQI & EU)	2	2
Pessimism & fear about cannibalising staff and employment control	9	19
Optimism about staff resources being provided	2	3
Needing an international profile	2	2
Must consider CAO deadlines and cutbacks	4	4
More control & less trust	1	1
IOTs are being pushed into box by government	2	3
Fearing future IOT developments - redeployment	1	3

Final focused coding headings illustrating salient emergent meta-organisational level themes from all research venues having impact on academic creativity and innovation in NPDV across research sites.

Table 5-6 Meta-organisational themes in NVivo database, from final coding round.

Following analysis and synthesis of these categories, the following subthemes emerged from the data, elucidating respondents' experiences of meta-organisational factors having impact on creative curriculum development. The next section in this chapter details the perspectives and experiences of respondents in relation to these themes: Global and national competitive pressures; Political & economic agendas, and Mechanisms of control.

5.4.1 The impact of global and national competition

There was a conspicuous absence of explicit references in the IOTs to issues affecting academic creativity beyond the HE organisation. In the literature, several references were made to the pressures of global higher education, yet on the ground in the IOTs, though policy controls emanate from EU directives, relatively few explicit references were made by participants in the interviews, to issues beyond Irish national borders. This is not surprising given the regional remit of the IOTs, which was initially enshrined in statute in the Regional Technical Colleges Act (see section 3.5). This might represent a reasonable explanation for the relative absence of comment on global competitive issues by IOT respondents. However, though global competitive issues were not often explicitly referenced, they permeated the discussions, providing the implicit backdrop for various concerns, for example those expressed by respondents over the market segment the IOT sector is permitted to service. IOTs are constrained from developing programmes in certain disciplines at various times, some are preserved by the universities (Law; archaeology and medicine are some examples). More recent drives towards consolidation of individual institutes into larger technological universities, to deal with increasing competitive pressures might suggest that the regional remit may need to be revisited.

The impact of global competitive pressures: One of the outliers in discussions related to global competitiveness in HE, Liam, from the university venue Echo, referred to concerns about the university developing its “international profile”. He spoke about the need to innovate, to appeal to a global audience and to design new programmes and attract student demand for programmes from further afield than Ireland. He mentioned the need to:

> *Appeal to students who are not within the European Union as the world is globalised, and we must structure our degrees to a more international global focus (Liam, Lecturer, Echo).*

The impact of IOTs being limited to discrete disciplinary development: At national level, HE level strategies (to some extent influenced by Bologna directives) limit new disciplinary developments in the IOTs. The implication of this is that certain programmes may not be approved for the IOT sector. Highlighted in this study in Beta more than in other research venues, participants have experienced the Irish

Higher Education Authority (HEA)[19]as setting limits on IOT new programme development in two ways: in the reduction of the number of programme offerings at undergraduate level on the CAO[20] and by restricting the development of programmes in certain disciplinary fields. Thus, creating more obstacles to new programme development in certain fields. The CAO currently require each institute to cut back on the number of offerings, preferring the listing of multiple programmes together with a generic first year intake. These programmes would then segment to concentrate on specific disciplines over the subsequent years of the programme, thus reducing the number of listed specialist intake first year options on the CAO. As Liam (lecturer, Echo) from the university venue explains, when developing new and innovative programmes, designers must consider that:

> *Anything that creates more options at an undergraduate level on the CAO would have difficulty and will not be supported (Liam, Lecturer, Echo).*

Applying this logic, an innovative programme that was not sufficiently linked to existing programmes, to share an initial first year, would not be readily validated as it would not be included on the CAO. Stephen (HOS, Beta) is particularly concerned about how creativity in NPDV is boxed inside limited disciplinary parameters. The HEA does not permit IOTs to develop programmes in certain disciplinary fields. Stephen's school in Beta institute, has in the past, been actively prevented by the Irish Minister for Education and Skills, from developing programmes in disciplinary areas reserved for the universities, areas such as childhood education and archaeology. He claims the HEA:

> *Would like to slot the IOTs into a particular box […], producing technicians for industry (Stephen, HOS, Beta).*

The impact of internal and national competition: Further meta-organisational level factors referenced as having impact on academic creativity and innovation in NPDV, relate to the level of competition in the national marketplace from other institutes. Respondents across all research venues, were concerned at the lack of effective reviewing of market needs at a strategic level inside the institutes to

[19] The state agency with responsibility for funding and strategic development of the higher education and research system in Ireland.
[20] The Central Applications System (CAO) is the Irish universal university access system. Aspiring entrants to higher education access the CAO, select programmes of study and await the processing of their exam results a place on a programme of choice in line with the number of points they had gained in their Leaving Certificate, (Irish final year secondary level examinations, aggregated points of these exams are used to apply for college places).

address competitive challenges. Respondents stressed the importance of understanding and catering for the demands of students and ensuring these demands were balanced carefully with the demands of society and industry.

The term “cannibalisation” (Maria, Lecturer, Beta) emerges here as an implication of programme development which destroys as it develops, devouring the student demand for an existing programme within the same institute or department. As newer programmes are developed, students may be attracted to those and interest may be lost in older programmes, thus demand falls for the older programme and it is dropped by the institute. In effect, the older programme has been cannibalised by the newer programme. This is a concern referenced in Beta and Calypso institutes. Thus, national limitations on the scope and the introduction of innovative new programmes create complications in relation to internal competition in the institutes.

Furthermore, competition creates challenges. The struggle to remain competitive in the sector and the struggle to attract new student markets were issues expressed as having both negative and positive impact on academic creativity in NPDV. Negative in terms of the competitive challenges to be addressed within HEA and CAO stipulations and limitations, but positive in terms of stimulating academic creative development to address the challenges presented by competition. One example of market pressures generating positive stimulus for creative development was provided by Stephen (HOS, Beta). Stephen attributed the successful development of a competitive advantage in online delivery in his institute to competitive market pressures in the economic environment.

5.4.2 The impact of political and economic agendas

The emphasis in NPDV regulatory policies on industry concerns in the IOTs demonstrates just how effectively respondents have been programmed to focus on designing for industry. Echoing the employability agenda debates presented in the literature review, respondents claim that the immediate employability of graduates following competition of a programme of study is becoming the guiding principle of programme design in the IOTs. Yet 11 of the 17 IOT participants referred to capturing and balancing industry demands effectively with academic

requirements as challenging. Over half of all participants in each institute found effective consultation with industry in NPDV problematic.

The impact of curriculum-industry compliance: The pressure academics feel to meet the HE policy-driven pressures of curricula compliance with industry needs is evidenced in Figure 5-5 below. (Note that academics refer to potential graduate employers and those enterprises active in the relevant disciplinary field, principally within the private sector, as industry). This practice of excessively tailoring programmes to industry is strongly criticised in the literature (Moutsios, 2013). Participants feel this pressure but argue that they must balance needs of industry with the needs of the graduate. Tara is resistant to the pressures of "serving the needs of industry alone" (Tara, Lecturer, Alpha). Len suggests developers should first focus on teaching what the student requires and then on employability for industry (Len, HOD, Delta).

Standards set by the Irish HEI quality control agency, the QQI, closely "police" (Teresa, Lecturer, Alpha) the compliance to industry needs and this is assessed by NPDV external validation panels in the IOTs. Figure 5-5 below summarises references made to factors concerning industry in this study. Academics express concern about an incompatibility of this excessive focus with the life skill developmental needs of the graduate:

> *The balance between the needs of industry and those of the graduate must be found (Maria, Lecturer, Beta).*

In fact, though the pressure to conform to industry demands is evident in the data, respondents claim it is difficult to get buy-in from industry in the programme development process.

> *We did a survey of employers and what happens sometimes is, I think we can fabricate the need for it (Helen, HOS, Delta).*
>
> *The biggest challenge in the process is to actively involve industry to collaborate throughout the project (Len, HOD, Delta).*

The impact of professional associations: Professional associations' stipulations also limit the potential to foster graduate creativity, according to Laura in the university:

You have to have a degree that is accredited by the [redacted] Society […] we have very little flexibility in [redacted] undergraduate programs to put in any creativity and innovation. Very very very little (Laura, Lecturer, Echo).

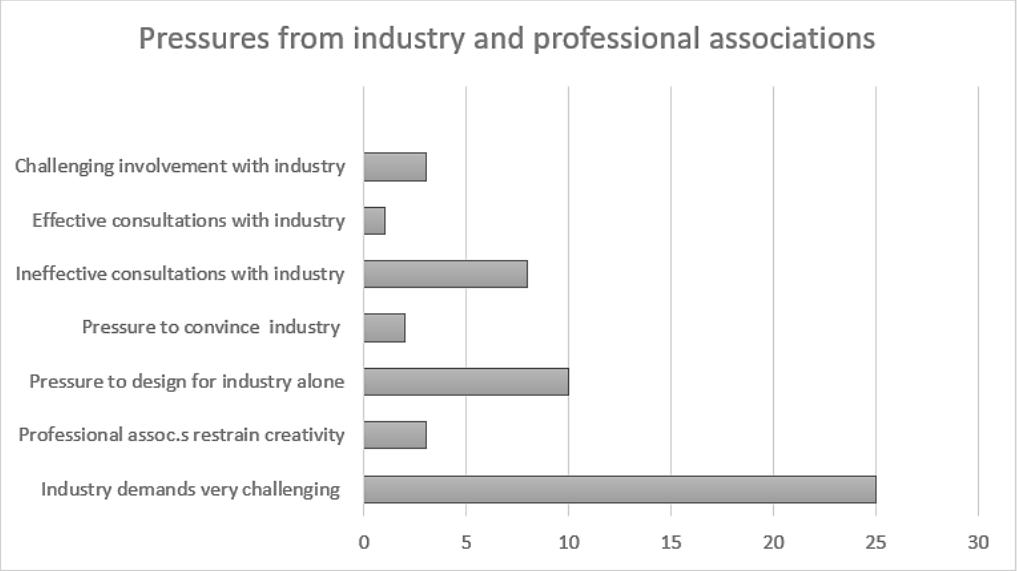


Figure 5-5 Pressures to design to industry requirements

The tensions between the employability, academic and personal development agendas are difficult to navigate within NPDV. Pressures like these have the potential to motivate creativity, however when the challenges are too great, they act as demotivators (Amabile and Pratt, 2016). It is important to design programmes of learning that are functional and serve the needs of the graduate for employability purposes, but it is clear from this study, that research participants are eager to develop programmes of learning which equally foster the future flexibility and creative potential of the graduate. Concerns relate to the excessive focus on narrow immediate industry needs. Excessive alignment to immediate market requirements is seen to limit the future potential of graduate personal growth and to restrict academics' ability to be creative and innovative in NPDV. These concerns strongly reflect knowledge society opposition debates uncovered in chapter 2. Academics feel their creativity is increasingly restricted to development to meet industry and economic objectives, to the detriment of the holistic development of the undergraduate. Here it appears that the purpose of the IOT establishment has been reconstructed as an adjunct of the economy, to meet objectives driven by the economy, commodifying human abilities (Holborow, 2007).

The final subtheme at meta-organisational level having impact on academic creativity and innovation in NPDV emerged from references by participants to the control mechanisms employed to implement these politico-economic agendas and is detailed in the next section.

5.4.3 The impact of mechanisms of implementation / control

In their experiences of bringing creative initiatives through the NPDV process, respondents encountered several control mechanisms at meta-organisational level, comprising academic quality control policies and macro-economic instruments employed to react to fluctuations in the economic cycle.

The impact of academic quality control policies: Several state level and EU level academic quality control instruments regulate NPDV standards in Irish IOTs. Quality standards for Irish HE are increasingly established at EU level. The Bologna agreement inaugurated several harmonisation standards such as the compliance with discipline-specific programme learning outcomes in programme design (refer to the literature in chapter 2 for further detail). Irish IOTs appear to comply tightly with these regulatory procedures (Europa, 2009). Though Bologna agreements for HEI regulation were not frequently and explicitly referred to in the interviews, they are implicit in the undertone of bureaucracy and standards compliance complexity, as they have been reflected in Irish HEI standards (Duff, 2011). IOT participants in all research venues referred to the complexities involved in generic programme learning outcome terminologies, and associated difficulties created by state level compliance bureaucracy and European degree harmonisation control measures, such as the process of “constructive alignment”, and those generated by the standardised programme learning outcomes, which must be adhered to for certain disciplines. Constructive alignment is the process of mapping generic programme learning outcomes, in a complex generic spreadsheet, to justify and verify chunks of learning across the programme modules. This process is criticised by Helen in Delta, and this view is reflected by at least 17 out of the 20 research participants:

> *Constructive alignment is the worst thing we ever did in this place to me it just looks like an engineer got mad on it and did a spreadsheet and asked you to put an X in this, this and this and what does it mean, it means nothing……to me it is meaningless unless you describe what we are doing and why we are doing it (Helen, HOS Delta).*

The employability agenda has been strongly placed into programme design by the Bologna European education agenda, an example is the alignment of programmes to the European Qualifications Framework introduced by the EHEA to harmonise standards and transparency of programmes of learning across the EU. Participants feel these measures also contribute to the bureaucratic red tape within NPDV as they add to already stringent QQI criteria for programme validation.

The impact of recessionary adjustments to the economic cycle: Reactions to fluctuations in the economic cycle are of concern to respondents. They feel creativity is curbed by recessionary control measures such as cutbacks and restrictions in resourcing and funding. Participants claim these factors are generating fear of the unknown in terms of future employment tenure, and a sense of being more controlled and less trusted to do their jobs. In Figure 5-6 below, we can see that at meta-organisational level, participants are concerned about employment issues, lack of staffing resources and the ECF or Employment Control Framework implemented by the Irish government to curtail public sector staff recruitment (The ECF is explained further below). The implication of staff resourcing cutbacks results in a phenomenon, referred to by respondents, as staffing “cannibalism” (Maria, Lecturer, Beta). (This word was used earlier to refer to internal competition between programmes offered inside an institute). Respondents reemploy this term here referencing cannibalism as a negative consequence of creating a new programme of study, when new staffing resources are restricted. Older programmes suffer, as staff are redeployed to the new programme. Thus, new programmes cannibalise staff from the old ones. This disincentivises creative new programme development. The “participative safety"[21] factor conducive to creativity (Amabile, 1988) is absent in this environment.

[21] The concept of participative safety refers to the subjective perception of support and acceptance for creative initiatives in a non-threatening, supportive environment.

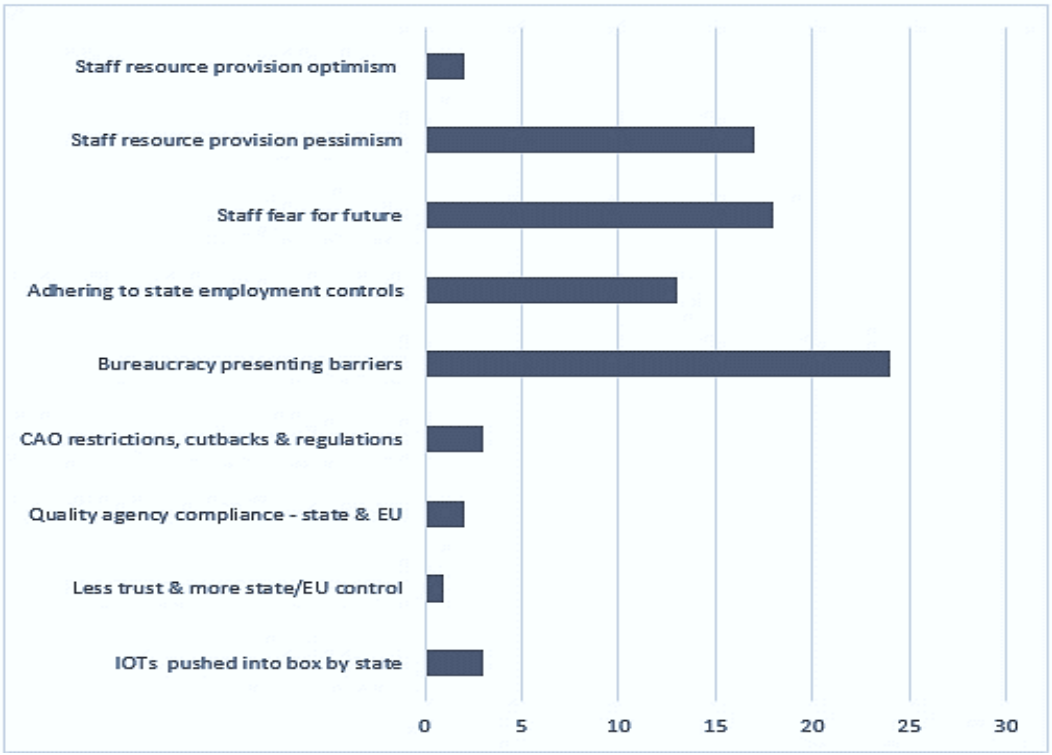


Figure 5-6 References to meta-organisational mechanisms of control

Recessionary measures in the sector resonate strongly in the experiences of respondents. Sam (HOS, Alpha) described himself as being “caught up in a cutbacks culture” having had to make staff redundant when he first came to the Institute in 2003, and he feels that the environment is still challenging. The emphasis was on “cutting down rather than building up” which created “no atmosphere for course development college wide” (Sam, HOS, Alpha). New programmes must be developed “within existing resources” (Tim, HOD, Alpha). This causes a lot of opposition to and fear of new developments because when you develop something, management respond with “a mantra of what are you going to give up, if you want develop something new” (Clare, Lecturer, Beta). Maria (Lecturer, Beta) and Liam (Lecturer, Echo) explain that the impact of cannibalism on academics is that they become defensive, gather papers together and fear development because it may lead to job loss. There is no incentive here for academic creativity and innovation. A culture of fear and mistrust has been generated by strategic resource restriction at meta-organisational level, evident in these excerpts from interview scripts:

> *[For this new programme development] we were given the green light and we were told, you know, blue sky, green field thinking, within the existing resources. Which is an oxymoron (Maria, Lecturer, Beta).*

> *Like if I am the languages lecturer and they decide not to run the languages course what am I going to do where am I going to be? Where will my hours be found? Huge fear and the external environment isn't helping that, because we were in this process of transition and nobody knows why we're doing it, and how were doing it, and whether it's going to be good or bad (Maria, Lecturer, Beta).*

The Irish national public-sector agreement which has curtailed public sector employment, the Employment Control Framework or ECF (Higher Education Authority 2011) is discussed by 9 out of the 20 sources. The ECF is "cutting hard down on some areas" and is making it difficult to engage new staff for innovative development (Stephen, HOS, Beta). Reference is frequently made in the interviews to the "Croke Park" Agreement, the common name given to the Public Service Agreement (PSA, 2010) which is experienced by respondents across all the IOTs as a mechanism of gaining greater control (Tony, HOD, Beta) over the IOT sector.

Participants interpret the increase in control over public sector employees as a lack of trust in academics' ability to do their job effectively. Thus, trust re-emerges again at meta-organisational level as a factor of concern. Tony (HOD, Beta) believes that the lack of trust is a huge problem, academics feel controlled by, in his view, "increasing neoliberalist agendas in education". He explains:

> *It's about the accountants and the managers looking at education as to what revenue it can generate for the organisation, rather than the intrinsic good of it. So, that's the problem now and so is I feel there is less trust. People were recruited 10 or 12 years ago, because they were capable of doing a job. They were left at it. They were trusted to get along and do their best and all that sort of thing. There has been a change not only in this IOT, but in the sector, all over…… I feel there is less trust, there is more control…… so there is a certain level of dissatisfaction or distrust in the system (Tony, HOD, Beta).*

Tony believes that increasing IOT sectoral controls limit innovation time and freedom and are perceived to stem from a lack of trust in lecturers' and management's ability to carry out their specialist tasks independently. The lack of meta-organisational level trust is experienced by participants in four out of five of the research venues. It is an important reoccurring issue for the participants in this research study.

In summary, the meta-organisational factors having impact on academic creativity and innovation within NPDV referenced in this chapter include:

i. Global and national competitive pressures: which include the contrast between the explicit university and implicit IOT references to international competitive pressures; the limitations placed on disciplinary developments due to CAO stipulations and disciplines reserved for universities and the references to internal 'cannibalism' of programmes and national competitive pressures.
ii. Political and economic agendas: which include the pressures of industry curriculum compliance and professional associations' stipulations.
iii. Mechanisms of control: which include the stringent quality control measures nationally and originating at EU level to regulate and harmonise programme development; the recessionary adjustments to the economic cycle, creating fear and cannibalisation of staff from other programmes.

Delta respondents experience more freedom to innovate within the control measures: It is interesting to observe that there is again, one institute which stands out as more optimistic than the others in relation to experiences of meta-environmental controls, specifically in staff resourcing. Participants in Delta believe they can resource a new programme with new staff if required. The references to staffing optimism at the top of Figure 5-6 above come from within Delta. None of the other institutes share this optimistic perspective about staffing. Further, for Delta research participants, state control measures do not appear to have the same inhibiting effect on NPDV when compared with other IOT respondents. In contrast, while allowing for the disproportionate number of participants interviewed, Alpha participants are more pessimistic than all three of the other institutes in relation to governance restrictions on academic creativity and innovation in NPDV.

This interrogation of Irish NPDV processes will contribute to the field of knowledge about curriculum innovation in HEIs: the empirical research within this detailed Constructivist Grounded Theory Case Study of academics' experiences of new programme development and validation in four IOTs, is the first in-depth interrogation of academics' experiences of NPDV conducted in Irish IOTs and is, therefore one of the contributions to knowledge of this research.

Having analysed the experiences of the academics bringing creative initiatives through the curriculum development process, I returned to the literature to compare my emerging grounded theory to the academic press.

5.5 Developing a three-level model for HEIs

Considering theoretical models: Returning to the literature having now begun to develop theories from the empirical data, I considered theoretical models in the academic press constructed to elucidate creative climates. I considered the TCI (Team Climate for Innovation), developed by Anderson and West, as it had been initially employed to assess public sector health institutions in the UK. I found the TCI factors to relate to participant experiences in this study. Anderson and West's model emphasised the importance of vision, participative safety, support and task orientation in a creative climate. However, I found Amabile's model more detailed and as it is still the only widely-cited theory to attempt a comprehensive description of both the process of individual creativity and the process of organizational innovation, as well as the ways in which the two are linked through mutual influence. I examined it in-depth. Furthermore, according to Amabile et al. 2016, theoretical advances in this realm have been sparse in recent years (Amabile and Pratt, 2016, 158). This confirms the conclusion of my literature review that the most comprehensive and most widely tested model to illustrate the climate for creativity and innovation in any organisation remains the Amabile model. The Componential Theory of Organisational Creativity acknowledges the interactive impact of the environment on the individual and team, and specifically on the individual's intrinsic motivation to engage in the creative process.

Unexpected close correlation of findings: Following reconsideration of climate for creativity models in the literature, the multilevel pattern of influences on academic creativity and innovation emerging from the data as illustrated in the section 5.4 above, were found to coincide closely with Amabile's componential model (refer to Chapter 2 for further detail on this model) at the first two levels. This was unexpected, given that much of Amabile's research relates to climates for creativity and innovation in commercial organisations. Consistent with findings from this research, Amabile's componential model classified influences on organisational creativity and innovation at two levels: individual/team and organisational (Amabile, 1988, 2012; Amabile and Pratt, 2016). However, inconsistent with this study, Amabile's model did not describe factors which influence organisations at meta-organisational level, whereas sections 5.2; 5.3 and 5.4 above, showed that meta-organisational factors impact strongly on

academic creativity and innovation within this research. In this section, salient emergent themes grounded in the data from this study will be considered in the light of Amabile's Componential Model. Cross institute comparisons will then be made.

Increasing trustworthiness of findings: The discovery of the coincidental alignment of emergent concepts in this study with The Componential Theory, a theory cited "nearly 4000 times" (Amabile & Pratt 2016, 1), was exciting, as Amabile's research is highly respected in the field of creativity research. Further, given the wide use of the componential theory in creativity research, any similarities between the concepts in my data with Amabile's research, would lend increased trustworthiness to my research findings.

Selecting Amabile's model to scaffold new data and develop a model for HEIs: Amabile's research has been reviewed earlier in Chapter 2 (see section 2.7). Amabile et al.'s newer (2016) dynamic componential model is also referenced in the appendices. In this comparison of the componential model to the three-levels of factors emerging from the data, I chose not to employ the revised version of the componential theory (Amabile and Pratt, 2016) but the earlier componential model (1988). The reasons for this choice are that the 2016 Dynamic Componential Model revision (Amabile and Pratt, 2016) is more diagrammatically complex and focuses more intently than the previous version on psychological behavioural complexities which are not explored deeply in this study and reach beyond the scope of the research questions in this research. Thus, Amabile's 1988 model is employed in this chapter to compare and scaffold the findings of this inquiry. A deficit in the componential model is addressed in relation to meta-organisational factors emerging from this study accounting for the idiosyncrasies of the public sector HE organisations reviewed. I make the second primary contribution to knowledge of this thesis, by further developing Amabile's model to build a conceptual framework of factors impacting on academic creativity and innovation in HEIs: The new *three-level model for creativity and innovation in HE organisations.*

5.5.1 Comparing emergent findings with theory

At individual / team level: Within the individual / team layer of factors, respondents emphasised the importance of teamwork and it was inferred from the interview

discussions, demographics and professional specialisms that respondents themselves had the personal and professional skills, competencies and attributes essential for academic creativity and innovation. Resilience to deal with challenge and the complexities of NPDV is required at this level, to steer the development of creative curriculum through the system. A comparison with Amabile's Componential Model identifies the presence of three essential requirements for creative endeavour at the individual/ team level: Domain relevant expertise; a receptive cognitive style and self or intrinsic task motivation. Though the same headings were not used, the references were equivalent and research data in this study arising at individual / team level was found to directly correlate to factors identified at this level within the Componential Model.

At organisational level: When the emergent themes from this study were compared to those presented at organisational level in Amabile's Componential Model (1988, 2016), remarkable similarities were observed. Table 5-7 below relates the themes arising at organisational level in Amabile (1988, 2016) to those which arose in this study. At the level of the work or organisational environment, Amabile (2012) found that factors which can block creativity to include: a culture of harshly criticizing new ideas; organisational political problems; emphasis on maintenance of the status quo; excessive time pressures and a more conservative, risk averse culture generated by senior management. Conversely, idea-sharing; positive work challenges; team synergy and collaboration; freedom; supportive management; creativity-encouraging systems and vision; recognition for creative achievement and for developing new ideas can stimulate organisational creativity (Amabile, 2012). From an examination of the themes in Table 5-7 below we can see that the componential model themes coincide directly with those experiences classified under the overarching themes arising in this study: Leadership correlates to the detail under Organisational motivation to innovate; NPDV innovation process complexity correlates to detail in Management practices and the Allocation of resources mirrors Resources in the task domain.

Organisational level factors having impact on creativity and innovation		
Themes emerging from this thesis	**Themes from Amabile's componential model**	
Leadership	Organisational motivation to innovate	Innovation orientated vision, mission and strategy from CEO; management support; risk oriented, future orientated leadership; innovation valued & enthused.
Allocation of resources	Resources in task domain	Material and expertise resources; availability of training & financial resources
NPDV process complexity	Management practices	Skills in innovation management; scheduling; Appropriate balance betw een freedom & restraint; Goalsetting tight at level of vision & strategy but loose procedural formality as progress tow ards goals.

Table 5-7 Correspondence of organisational level themes with the componential model

The CGT methodology used in this study demands that theory be permitted to emerge freely from the data and therefore data should not be forced into predetermined categories. In this research, categories grounded in the data, emerged freely, before the literature was re-examined and findings were found to correlate strongly to the Componential Model. This close alignment permitted the efficient use of the Componential Model to scaffold data at both individual / team and organisational level with a view to developing a new theoretical framework of concepts conducive to a climate for organisational creativity and innovation in Irish IOTs.

Addressing the meta-organisational deficiency in Amabile's model: Amabile's 2016 revision of the componential theory of organisational creativity and innovation (Amabile and Pratt, 2016) recognises the organisation as an open system influenced by external forces, yet it does not go into detail on factors external to the organisation that have resultant impact on creativity and innovation inside the organisation. In fact, neither the original componential model of organisational creativity and innovation (Amabile, 1983, 1988, 2012), nor the revised model, the dynamic componential model of organisational creativity and innovation (Amabile and Pratt, 2016) illustrate meta-organisational factors having impact on internal organisational creativity and innovation. This shortcoming of the model is not unexpected, as to my knowledge, Amabile's models have not

been applied to public sector HE institutions. In these institutions, internal control systems are heavily regulated by external agencies.

Amabile (2012) recognises that the componential model fails:

> To include outside forces, such as consumer preferences and economic fluctuations [and this] limits the comprehensiveness of the theory (Amabile 2012, 9).

Further, the model does not consider the "influence of the physical environment on creativity" (Amabile 2012, 9). One explanation for this is contextual relevance of the research: Amabile's earlier research subjects were principally based in commercially orientated organisations. The organisational context in this study is different, and meta-organisational factors impact greatly on decision-making processes and the culture inside the public sector HEIs examined in this study.

To provide a comprehensive representation of the factors in this thesis which respondents have experienced as having impact on academic creativity and innovation in NPDV, (and thus by extension on the climate for organisational creativity and innovation in the Irish IOT research venues examined), an extension of the componential model was developed and employed to scaffold the meta-organisational level findings in this study. Table 5-8 below illustrates the additional layer of factors which has been added to the original 1988 version of Amabile's componential model. This table constitutes an original contribution to knowledge of this study.

The new extension addresses the componential model's shortcoming when applied to the Irish HE organisational context. Meta-organisational factors emergent in research data include: Global and national competitive pressures; Political & economic agendas and Mechanisms of control. Each of these three attributes are listed in the central column of Table 5-8. In the right-hand column there are examples, grounded in the words and experiences of respondents, of how the impact of these attributes might be considered and might result in the development of a HE climate conducive to creativity.

Meta-organisational	Global and national competitive pressures to innovate.	Internationally orientated organisational profile development. Designing to appeal to global audiences. Flexibility and freedom of higher educational institutions to develop across all disciplinary fields.
	Political & economic agendas encouraging of innovative initiative. (Relaxation / balancing of prescriptive state and EU agendas).	Balancing strategic focus on revenue goals in HE with a focus on fostering a HE climate conducive to creativity and innovation. Balancing the tensions between the employability, academic and personal development agendas
	Scaffolding meta-organisational mechanisms of control to support creativity and innovation	Thinking creativity first when implementing HE control measures. Simplification of standards compliance complexities, (i.e. Central student applications systems, Bologna, harmonised learning outcomes across the EU). Balanced and planned responses to the economic cycle.

Table 5-8 Meta-organisational factors impacting on academic creativity and innovation

The following figure, Figure 5-7 below is a graphical representation of the *Three level model of creativity and innovation in higher educational institutions.* This model, developed from this constructivist grounded theory case study, has been constructed to frame all the levels of findings in this chapter. This newly adapted conceptual framework builds on Amabile's research into organisational creativity and innovation (Amabile, 1988, 1997, 2012; Amabile and Gryskiewicz, 1989; Amabile *et al.*, 1996; Amabile and Pratt, 2016). The two circles at the centre of

Figure 5-7 are taken from Amabile's research and correspond directly to study findings, as explained earlier in this chapter. These factors lie within the organisation, represented by the inner circle which has been represented as permeable, to illustrate the fact that organisations do not exist within a vacuum but that they exist within a wider context or sphere of influence.

The newly added outer layer represented, includes the meta-organisational factors identified by respondents and comprise Global and national competitive pressures; Political & economic agendas and Mechanisms of control. The heavy width of the arrows pointing inwards indicate that meta-organisational factors exert strong influence on the individual / team level and organisational level factors. There is one weaker arrow pointing outwards from the factors at individual / team and organisational level towards the meta-organisational level factors. This weak arrow, relative to the wider arrows, indicates a weaker reverse force of influence exerted from within the institutes on meta-organisational pressures, controls and mechanisms. Indeed, in this study, there was just one example provided by respondents of a reverse flow of influence, when Stephen (HOS, Beta) urged lobbying of the HEA to revise the disciplinary limits on programme development in the IOTs.

Though recommendations are made in the following chapter to address the impact meta-organisational forces have on internal HEI organisational creativity and innovation, further research would have to be conducted, to examine the flows of influence more closely. Inside the inner circle there are no changes made to Amabile's 1988 Componential Model with regard to individual/ team level and organisational level factors, as the number and substance of the first two (individual/ team and organisational) levels of factors from this study align closely with the original model.

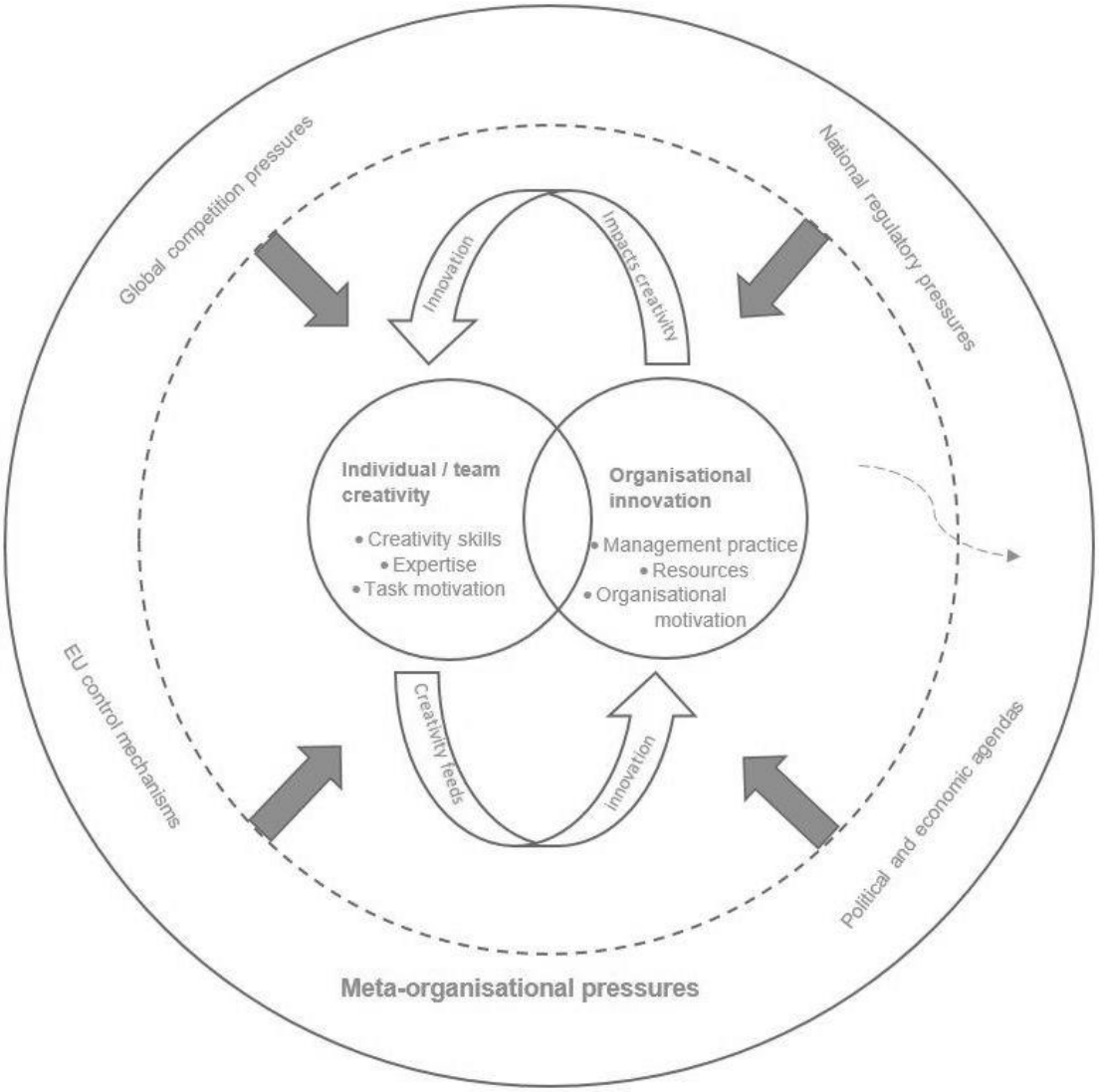


Figure 5-7 Three-level model of creativity and innovation in higher education organisations

The new model is further explicated in Table 5-9 below. The first two levels shown are taken directly from Amabile's Componential Model of Organisational Creativity and Innovation (1988). The shaded third level is new, it explicates the wider outer circle in Figure 5-7. The table shows the factors having impact on creativity and innovation in Irish IOTs. This newly developed model and table will enhance understanding of the complexities involved in generating a climate for creativity and innovation in HE. In future policies related to the promotion of HE creativity, these are factors which must be considered if an improved climate is to be developed in Irish HEIs, to authentically develop a climate conducive to academic creativity and innovation in HEIs.

The three-level model of creativity and innovation in higher educational organisations *(An extension to Amabile's 1988 model, resulting from research conducted in Irish Institutes of Technology).*		
Level	Attribute	Examples
Individual /Team	Domain relevant skills (Specialism and knowledge)	Factual knowledge, specialised skills, technical skills and expertise
	Creativity – relevant processes (personal traits and cognitive style)	Cognitive style receptive to tackling new perspectives; open ended exploration of the new; Energetic work pursuit. Personality traits; flexibility.
	Intrinsic task motivation (initiating & sustaining the process)	Self-motivation and perception of the task. Task motivation is influenced by work environment.
Organisation	Organisational motivation to innovate	Innovation orientated vision, mission and strategy from CEO; management support; risk oriented, future orientated leadership; innovation valued & enthused.
	Resources in task domain	Material and expertise resources; availability of training & financial resources
	Management practices	Skills in innovation management & scheduling; Appropriate balance between freedom & restraint; Goalsetting tight at level of vision & strategy but loose procedural formality as progress towards goals.
Meta-organisational	Global and national competitive pressures to innovate.	Internationally orientated organisational profile development. Designing to appeal to global audiences. Flexibility and freedom of higher educational institutions to develop across all disciplinary fields.
	Political & economic agendas encouraging of innovative initiative. (Relaxation / balancing of prescriptive state and EU agendas).	Balancing strategic focus on revenue goals in HE with a focus on fostering a HE climate conducive to creativity and innovation. Balancing the tensions between the employability, academic and personal development agendas.
	Scaffolding meta-organisational mechanisms of control to support creativity and innovation	Thinking creativity first when implementing HE control measures. Simplification of standards compliance complexities, (i.e. Central student applications systems, Bologna, harmonised learning outcomes across the EU). Balanced and planned responses to the economic cycle.

Table 5-9 A three-level model of creativity and innovation in higher educational organisations.

Source: Original adaption and extension of the componential theory by Mc Ginn, J, from Amabile's work (Amabile, 1982, 1983, 1988; Amabile and Gryskiewicz, 1989; Amabile *et al.*, 1996; Amabile and Pratt, 2016).

5.6 Summary of main findings of this research

The following is a synopsis of principal research findings unveiled in this study of creative climates in HEIs in Ireland:

Defining creativity: The academics interviewed in this research define creativity as: an ability to see more than others see; the ability to see potential opportunities and the holistic narrative which makes the big picture coherent.

Defining innovation: Respondents define Innovation as the realisation of creativity, that process which follows the creative impetus, and comprises the hard work which pushes creativity through. The ability to innovate is considered an ability not lacking in the academic environment but one which some academics employ more than others.

Creatives abound but innovators are scarce: A scarcity in the number of people who were able to push the creativity through the innovation process in the HE system was highlighted. “We have a shortage of innovators to push it through” (Teresa, Lecturer, Alpha). No reference was made to a deficit in academic creative ability in the HEIs.

Creativity and innovation are valued but radical creativity invites caution: The radically creative is not readily accepted. Whilst caution is urged in the launching of radically creative initiatives, there is general agreement that creativity and innovation are valuable attributes of HE environments.

Creativity paradox, creativity is promoted in policy but inhibited in practice: In practice, academics experience difficulties steering creative new developments through NPDV policy protocols and NPDV institute processes.

No formal resource allocation to NPDV in any institute examined: Research data shows that little or no resources are allocated to the NPDV processes inside any of the institutes examined. If what is truly valued, is actioned and resourced effectively, then the results of this study show, that the innovation process studied in this research is not truly valued by the IOT system.

Deficit in creative climate research in HEIs: There were several comprehensive peer reviewed models developed to support creative climates and innovation

processes in commercial organisations, but only two initiatives were uncovered in this study related to HEI creative climate examination (Ekvall and Ryhammar, 1999; European Commission, 2014).

Deficit in NPDV process studies in Irish IOTs: Though there are curriculum innovation workshops, only one comprehensive model was found which supports the NPDV process in HEIs, and this model, the Guelph curriculum development support model (Wolf, 2007) was suggested (in Chapter 2) as a mechanism which might be adapted to support academics in NPDV in the Irish IOTs.

Where there is a culture of trust and respect, creativity flourishes: Despite limiting complex state and supra-state level regulatory controls common to all organisations examined, in venues where there is a culture of trust; professional respect; leadership direction and support, academics are more encouraged to face the challenges of creative endeavour.

5.6.1 Theoretical and pragmatic developments from findings

Study findings corroborated by literature at individual / team level and organisational level: Amabile's componential model of organisational creativity and innovation was found unexpectedly to closely resemble the individual / team and organisational level findings from this study but not the meta-organisational level factors which also emerged from the data. This was addressed, and a new theoretical framework was developed (refer to next point).

New model developed for creative climates in higher education: The three-level model of creativity and innovation in HE organisations was developed to illustrate all the three-levels of factors having impact on the climate for creativity and innovation which emerged from this study.

Factors having impact on academic creativity and innovation in NPDV were detailed in full. The process of academic curriculum development and validation has been thoroughly documented, and a lot of detail is provided which could be employed to further improve this process in the IOTs and improve the HEI climate for creativity and innovation in curriculum development initiatives.

High-level dichotomic positioning of agendas for creativity and innovation: The Bologna-buttressed knowledge society creativity agenda has been interpreted as short-term-employability focused; reductionist and lacking in philosophical vision (Peters, 2009; Moutsios, 2013; Teichler, 2013; O Connor, 2014). This agenda is contrasted with the creative, generative and holistic benefits of the freedom to explore knowledge for knowledge's sake, represented in this debate by the Humboldtian HE ideal. An argument is presented for a pluralist combination of both. Cognisant of the benefits of creativity to economic development and of the positive aspects of the EU Bolognese pragmatic approach to HE, a more pluralist vision for HE in Europe is proposed by Wilhelm Krull (Ash, 2014). The alliance of both the employability strategic perspective and the Humboldtian philosophical ideal for HE, he argues, would lead to a broader more creativity-responsive focus in academic circles, unleashing creativity talent.

5.7 Summary of chapter 5

At the beginning of this chapter, two of the principal questions guiding this study were posed: first, how academic creativity and innovation is supported in practice within current new programme development and validation practices in Irish IOTs and second, what dimensions of the broader HE environment are perceived to hinder / foster academic creativity and innovation. In answer to the first question, it is evident from the data that the institutes could do a lot more to support academic creativity and innovation in NPDV. The process difficult to navigate; there is no reward for participants to bring through novelty; resources for innovative development are lacking and there no formal strategic guidance or training provided.

The detailed interrogation of the NPDV process presented in this chapter, provides original insights into the procedures and practices behind curriculum development in the IOTs in Ireland. Within the current culture in Irish HE, when many of these institutes are considering joining forces to develop technological universities, the factors illuminated here will be helpful when attempts are made to align quality and teaching and learning systems in institutes. The insights provided into best practice management and leadership culture for innovation will be useful in this changing environment.

The comprehensive three level model to support a climate for creativity and innovation in HEIs developed in this chapter will also be useful. It is expected that this model will provide HEI management and policy developers with a means of checking future policy impacts on creative climates in HE and enable them to *think creativity first* before introducing creativity inhibiting directives.

Leadership, Trust, support and professional respect are reoccurring human factors emerging as strategically important across all three levels. These factors have significant impact on respondents' motivation to be creative. Just as in the literature, the argument is made for a more holistic educational philosophy to develop individual graduates for future social, economic, and developmental societal needs, there is a need to develop a new holistic philosophy for creativity and innovation to support staff inside our institutions. This, it is clear from this study, must necessarily involve deep appreciation and regard for colleagues in in a higher education climate where inter-collegial trust, support, leadership and professional respect have solid currency.

6 Conclusion and recommendations

6.1 Introduction

For the Irish Institutes of Technology, this is a period of massive change. Having faced two decades of financial constraints, many of these institutes, initially designed to award qualifications at sub-degree level, now are on the verge of re-designation as technological universities. In addition to these impending paradigmatic shifts in the Irish HE system, technology has had a significant impact on the global provision of higher education, online provision has led to increased global competition and cost competition. Furthermore, graduate skills and competencies must continuously evolve with the pace of emerging knowledge and cutting-edge technologies and HE providers must adapt teaching and learning processes accordingly. Adjusting and keeping pace in this changing environment demands change agility and creativity on the part of Irish HEIs. This study, which provides significant insights into the attributes of a climate supportive of academic creativity and innovation in HEIs in Ireland, is timely and relevant, and it contributes to the ongoing policy discourse about strategies for the future direction of the Institutes of Technology with the Irish HE sector.

The objective of this study was to understand the factors which impact on academic creativity and innovation in Irish higher educational institutions, and in Irish Institutes of Technology in particular. The innovation process of new programme development and validation was chosen for close examination in this study as this process lies at the threshold of creativity and constraint within the HE system and, interconnected with many system functions, it functions as an effective measure of staff and management engagement, flexibility and strategic foresight within the HE research context reviewed. Further, it is an important generative academic process to study, given that it provides for the design of the future programmes of learning in HEIs

This final chapter begins with a table showing the principal conclusions of this inquiry and a presentation of associated recommendations to address issues unveiled. This is followed by a précis of principal contributions to knowledge of this research; a brief discussion of the limitations of this study and suggestions

for further research. The chapter closes with a discussion related to the implications and the impact of the findings in this study.

6.2 Synopsis of principal conclusions

Creativity does exist in a climate of constraint: subject to the presence of the important conditions of ***leadership, trust & support.***
Creativity policy ideals are not supported in practice: this is the ***HE creativity paradox.***
There are different agendas for creativity in HE: there is a need to adopt a pluralist perspective and to ***think creativity first*** when introducing new HE policies.
Three levels of factors affect academic creativity and innovation (at Individual/ team; Organisational and Meta-organisational levels) in the Irish IOTs in the sample.

Table 6-1 Principal conclusions of study

6.2.1 Creativity does exist in a climate of constraint

This study found the NPDV process complex, difficult to navigate and replete with multiple level regulatory protocols. Despite the difficulties, process training and strategic orientation were lacking for new programme developers. However, even within this climate of constraint, academic creativity can be realised. Findings show that the climate in Delta is more conducive to academic creativity and innovation than that of the other three IOTs. Despite the lower number of respondents, the highest number of references of leadership behaviours conducive to academic creativity and innovation are referenced in Delta institute. This institute stands out as having a climate where academics' creative efforts are encouraged, albeit they are subject to the same mechanisms of control at state and supra-state level as other institutes. Research findings parallel those in the literature: Trust, openness, supervisory encouragement, freedom and participative safety play a significant role in creativity stimulation (Ekvall, 1997; Anderson and West, 1998; Amabile, 2012). The reasons for this more favourable climate include:

i. Leadership supportive of innovation and investment in an institutional trust culture
ii. High degree of trust invested in the professionalism and domain-expertise of staff
iii. High decision-making transparency and staff consultation
iv. Clarity of NPDV institute policies and NPDV institute protocols

Delta participants felt more trusted and less excluded from decision making by senior management within the NPDV process, than those in other institutes. The supportive leadership style in Delta has had a “massive impact”, leading “to a lot more creativity and a great sense of openness and even transparency” (Len, Lecturer, Delta).

In Echo university, the inter-collegial trust culture is also evident. Evidence of this trust and respect for staff credibility was provided in the ongoing practice of direct engagement of innovators with external validating specialists. This contrasts sharply with the IOT system where programme credibility validation is conducted by detached external scrutiny. Whilst allowing for the fact that there was just one university research venue, there is a marked contrast here in relation to evidence of leadership trust in academic staff professional credibility. Even Sal, the NPDV specialist HOS, Sal (HOS, Calypso), must prove not only the viability of the programme proposed in her IOT, but also her own professional expertise to the EB, before the new programme gets a proper hearing. This practice is evident in Alpha also.

Evidence was found, grounded in the terms employed by respondents, that leaders’ and managers’ investment in trust and professional respect in staff, is extremely important in the development of a climate for creativity. Frequently, in the empirical data, the cultural creativity reticence and lack of trust is violently obvious: In the NPDV process in Alpha, new programme proponents are “filleted” at validation (Eric, HOD, Alpha) and doors must be “kicked open” as they are “slammed in your face” (Sam, HOS, Alpha). Whilst respondents strongly acknowledge the benefits of robust debate, there are heavy undertones of professional disrespect in some expressions used. In effect, there is evidence to suggest participants’ professionalism and expertise are vehemently undervalued. In some institutes. There is an extreme lack of trust in the professionalism of academics displayed by those regulating the NPDV process in institutes where there is such a need to control fellow academics to such an extent.

The concern for trust in the HEI culture was also a recurrent theme in Oliver’s (2002) HE research, articulated by the academics’ need for creative space and freedom to permit curricula flexibility and experimentation. Flexible HE cultures which encourage risk-taking and academic and student creativity need space

(Tait, 2002) and a certain degree of professional trust and freedom (Amabile, 1997).

In contrast to the control culture evident is some research venues, a more encouraging climate for creativity is evident in Delta. HOS Helen acknowledges the professionalism of the academic innovators in her department as does Sal, the NPDV specialist HOS identified in Calypso. Personal resilience and a tight team are important. Individuals engaging in programme development in the IOT environment must be resilient and the collective synergy created by working within a like-minded team is experienced as an important intrinsic motivator for academic creativity and innovation in NPDV.

In sum, in a comparison of the contrasting cultures for academic creativity and innovation, Delta was found to provide the most conducive climate, despite being subject to the bureaucratic and procedural constraints common to all IOTs. In Delta, difficulties common to the IOT sector, are circumvented by leaders. Although there is no formally assigned management responsibility for directing NPDV in any of the institutes, findings demonstrate that academics have a more positive experience bringing creativity through the innovation process in an organisational climate where they experience strategic leadership support and vision, and where there is a culture of collegial trust, professional respect and appropriately balanced procedural structures.

6.2.2 Different agendas for creativity in HE: need to think creativity first

The creativity and innovation skills which are being promoted by the EU and Irish HE policies are of a much focused, and restricted variety. There are many academics who criticise this approach to education, and argue for a broader, more holistic educational orientation for the benefit of the development of the individual (Jackson, 2011; Robinson, 2011; Mahmoudi *et al.*, 2012). Lynch (2012) claims that Irish higher education is educating for the market economy (Lynch, 2012, 98) and has lost sight of the aim of educating for personal development. Policy agendas place inordinate emphasis on the express development of industry focused skills in graduates (Jackson, 2008; EurActiv, 2009; Peters, 2009; Robinson, 2011; Moutsios, 2013; Teichler, 2013). Further, Ash (2014) claims that the Bologna vision for HEI fails to articulate a philosophical vision to support the

European higher education system “that goes beyond the logic of an economic or administrative reason” (Ash, 2014, 86). Skills’ development is more prominent than educational development in the Irish strategy for education document, the Hunt Report (2011).

Whilst curriculum content geared towards immediate employability does have the desirable economic benefit of servicing industry requirements, in the longer-term the effect of an overly enhanced focus on industry skills, I believe, will be detrimental. A misbalanced narrowly focused education agenda servicing in the first instance, the employer and not the learner, may readily produce workers who fit easily into scientific management style workplaces, but who are limited in their abilities to adapt to complex contemporary dynamic working environments. The epistemological alternative is a broader based curriculum unfettered to economic objectives, with a longer term educational focus, aimed at developing a responsible and responsive global citizen (Von Humbolt and Coultard, 1854). This alternative is being sidestepped in the current contemporary educational drive.

It is my view that a pluralist perspective should be adopted in the Bologna versus Humboldtian ideal for higher education creativity and innovation. This view was first articulated by Wilhelm Krull. Krull suggests the appropriate approach to HE in Europe is to harness and modernise the expansive educational philosophy of Humboldt and combine this with the globally responsive practicality of Bologna and a renewed respect for students as co-producers of knowledge and their own learning. Students should not be considered as consumers but as co-producers of their own learning and knowledge, to be taken seriously and provided with a system of learning which adopts aspects from both interest groups. This humanist perspective appears to fit with Amabile’s (1983) broad view of creativity as the confluence of self-governed intrinsic motivation and domain relevant knowledge, skills and abilities. HE policy developers need to adopt a pluralist perspective and *think creativity first* when introducing new HE policies and practices potentially constraining of HEI climates for creativity and innovation. The new model developed in this study could serve as a useful tool in this regard.

6.2.3 Creativity ideals are not supported: the HE creativity paradox

In Ireland, HE strategy contradicts itself: Regulatory and recessionary polices tighten control while "repeatedly emphasising flexibility and autonomy" (MacLaren, 2012, 161–168). Increasing regulatory procedures in HE in Europe were also identified as a concern in the literature review and interview data corroborate this finding. In tandem with the industry focus in HE, administrative accountability procedures increasingly occupy lecturers' time to the detriment of time spent on independent research and lectures. Academic freedom to engage in research led teaching is restricted. Trust and freedom, identified earlier as important attributes of an organisational climate conducive to creativity and innovation are not fostered in this HE environment where increasing controls further limit academic freedom (Keeling, 2006; Mather and Seifert, 2013; Kallio *et al.*, 2015). There are recessionary staffing controls and disciplinary limits put on Irish IOTs. There are Irish state controls such as QQI and CAO limitations and now, increasingly harmonised ENQA procedures to comply with. UK academics also present strong criticisms of these increasing controls placed on British HE institutions. In relation to NPDV processes, Harvey (2004) claims accreditation processes "impose an extensive bureaucratic burden" and "restrain innovation" (Harvey, 2004, 207–222). Despite these criticisms, we saw that quality assurance mechanisms provide multiple benefits: QA systems provide a structure upon which new programmes of learning can be scaffolded and they also serve public accountability purposes and ensure programme credibility (Harman and Meek, 2000). QA protocol support academic creativity and innovation in NPDV by providing a structure or scaffold on which to build and develop. However, it is acknowledged at EC level that HEI systems can be overly bureaucratic and thus unwieldy in change initiatives.

There is no consensus in the literature on the impact of these and other structural impositions on creativity. Stokes (2006) claims that organisational structure and systems support creativity by bringing order to creative workflow and that inspiration for new ideas comes less from boundary-less freedom than from well-considered constraints (Stokes, 2006). In contrast, Amabile (1996) believes the imposition of constraints on creative agency reduces creativity of the outcome (Amabile, 1996) and Kleiman (2008) looks at the relationship between creativity

and structure in reverse, he posits that creativity can present challenges to institutional frameworks of constraint (Kleiman, 2008). Research data from this study, grounded in the perspectives of academic participants, advances a regard for the rigor and consistency of HEI control structures. Yet, at the same time, study participants concur with Amabile's view. The majority of IOT respondents experience these regulatory structures as frequently inhibiting their ability to be creative in innovative practices, particularly in NPDV. According to Tony in Beta, processes are "overly cumbersome" and "even to make minor changes to programs are very unwieldy and time wasting" (Tony, HOD, Beta). An appropriate balance is required, so that the structures can support and not inhibit creative initiative in NPDV.

In fact, the focus of HEI policies at state and EU level is to a large extent, targeted at creativity skills' development in undergraduates under the auspices of the knowledge society agenda. In relative terms, in the literature, there is little if any attention paid to the agents of graduate creative development, the academics, who have great impact on the underlying conditions contributing to undergraduate creative development. Furthermore, (with the proviso of philosophical focus variance from HE to commercial organisations), relative to the commercial sector, innovation in the higher education context has not been systematically theorised to the same extent as in commercial institutions. If HE policy makers truly wish to integrate policy with practice and develop HE cultures where creativity and innovation flourishes, they must consciously invest in their systems from individual and team level, through to organisational level and meta-organisational level. They must check regulatory controls and HE directives for their impact on the climate for creativity and innovation on the ground and before they introduce new legislation to further regulate academic practice, they must *think creativity first*.

Debates in the literature highlighted divergence in the positioning of agendas for creativity and innovation development in HEIs across Europe. However, in this thesis, I propose that neither the employability agenda, nor the Humboldt-inspired creativity for holistic development agenda, are by themselves sufficient as a vision for the development of climates for creativity and innovation in HEIs. I propose that HEIs would benefit from espousing both sets of creativity objectives.

Findings show that (despite the state and supra-state level regulatory controls which govern the NPDV process in the IOTs) that academics find it difficult to bring through creative initiatives in 3 out of 4 IOTs, but that they are motivated to face the challenges of creative endeavour in the institute where there is a culture of trust; professional respect; leadership direction and support.

Finally, in this chapter, a principal contribution to knowledge of this research study was presented: *a three-level model for creativity and innovation in higher educational organisations* was adapted from Amabile's componential model for organisational creativity and innovation and a synthesis of the multi-level findings in this study.

This newly adapted model is the first model to comprehensively gather together and illustrate the multi-level factors, drawn from the Irish IOT sample, which impact on the climate for academic creativity and innovation in higher educational organisations. This model can serve as a tool for higher educational policy makers to assess the potential impact of the introduction of new HE regulatory protocols on the creative practices of academics.

While the cultivation of employability and productivity specific creativity and innovation is positive and beneficial, a purely employability-focused rather than holistically orientated knowledge society creativity agenda may encourage the development of narrowly segmented graduate skill sets. It is my view that a limited focus HE creativity and innovation policy agenda, will restrict undergraduate learning experiences. Whilst curriculum content geared towards immediate employability does have the benefit of servicing industry requirements, in the longer-term the effect of this enhanced focus will be detrimental. A broader based curriculum unfettered to economic objectives, aimed at developing a global citizen (Von Humbolt and Coultard, 1854), with a longer term educational focus on the development of self-determining autonomous individuals, may be overlooked. The content of these programmes of learning would incorporate, for example, elements into modules such as critical thinking practices; critical consciousness and social trend awareness studies; strategic development and planning; involvement in creative endeavour and inter-cultural understanding, to name a few. These competencies would be developed alongside the more employability

focused disciplines such as for example: accountancy; statistics; laboratory practicals and similar disciplines. A balance would be created by reference to the philosophical alternative to this employability focused model for education, the model of academic education espoused by the Prussian philosopher and diplomat, Humboldt.

6.3 Six recommendations to address creativity in HE

6.3.1 Recommendation one: Broaden reach of the EU creativity agenda

In the literature review, the impact of economic and political drivers of change in the wider higher educational environment were presented. The differing agendas for the promotion of HEI creativity and innovation were reviewed. Whilst recognising the importance of the Bolognese pragmatic employability approach, a more balanced vision for a creative and innovative climate in European HEIs, would also embrace the more holistic, Humboldtian HE ideal, of fostering a broader research aligned curriculum, aiming to develop self-determining creative graduates. The alliance of both the employability focused perspective and the Humboldtian philosophical idea would lead to a broader, more creativity-responsive focus in academic circles, unleashing creative talent (Kleiman, 2008). It is my view that a balanced, broad-based expansive curriculum within a climate conducive to creativity and innovation would be fostered in higher education, if both approaches were integrated.

HEI policy makers must endeavour to broaden the pragmatic Bolognese knowledge society employability focus of creativity and innovation policy development, to foster the development of creative self-determining globally conscious individuals in academic environments, via a holistically balanced, broad-based expansive curriculum and a conscious attentiveness to climate factors conducive to academic creativity and innovation (facilitated by the new *three-level model for organisational creativity and innovation in HEIs).* This more expansive holistic philosophy for higher education, would assist the development of a HE climate, which is truly change responsive and supportive of creative and innovative endeavour.

6.3.2 Recommendation two: Facilitate cross-disciplinary fertilisation

It is my belief that, despite the difference in philosophical organisational orientations, higher education systems can learn from innovation research studies conducted in commercial organisations. For example, HEIs could benefit enormously by collapsing the disciplinary silos in traditional institute structures and benefit from traversing disciplinary boundaries. At present cross-disciplinary fertilisation is made more difficult by increasingly prescribed imposition of standardised common learning outcomes by discipline across the EU. Cross-disciplinary programme development can become difficult at the time of programme validation when the new programme of learning does not fit neatly into a prescribed box of learning outcomes.

At EU level, HEI policy developers should *think creativity first* and advocate some divergence from prescribed common programme learning outcomes per discipline to encourage, for example, the development of cross-disciplinary degrees to meet developing graduate needs.

6.3.3 Recommendation three: Address HE creativity paradox

Much criticism was levelled, at the tension between creativity related policy ideals and policy implementation, in the literature and empirical research findings in this study. Academics feel restricted in practice. They are expected to engage in innovative development yet simultaneously have become subject to greater academic workloads and the effects of sector rationalisation (McGoldrick and Edwards, 2002; DJEI, 2008; PSA, 2010).

Policy makers and senior management in HEIs should address the HE policy versus practice creativity paradox: They must ensure that policy to promote creativity and innovation is supported in practice by implementation strategies on the ground. They should conduct a *think creativity first* analysis, employing the three-level model before internal HEI policies are introduced, to assess what barriers to academic creativity and innovation exist.

6.3.4 Recommendation four: Promote trust, teamwork and leadership

This study has demonstrated that, despite restrictive and complex meta-organisational level regulatory controls on HEIs in general, in an institute where there is a culture of trust; professional respect; leadership direction and support, academics are more encouraged (than in the other IOTs where this culture is not in place) to face the challenges of creative endeavour. Furthermore, we noted that academics were motivated by effective team working within a “tight” group (Maria, lecturer, Beta) and the synergistic energy created by the team work dynamic. The implication of these findings is significant, as it highlights the positive impact of strong leadership for innovation and the presence of a culture of trust, professional inter-collegial respect; team and management support and freedom to innovate, on the successful development of a HE climate for creativity and innovation.

However, findings demonstrate that a significant majority of respondents in this research experienced a lack of trust invested in them by their senior managers. Furthermore, in the NPDV innovation process examined in this research, academics felt constrained by complex procedural obligations and are unrewarded for their creative efforts. Additionally, there is no formally assigned management responsibility for directing the innovation process examined in any of the institutes, nor is there formal training provided in the process, in any of the institutes. The lack of staff training in this innovative process is extraordinary, given the educative mission of the institutes.

If creativity and innovation are considered beneficial attributes of the academic climate, institute management should consciously leverage the significant role of leadership for innovation and develop a culture of inter-collegial trust within the institutes.

6.3.5 Recommendation five: Provide NPDV innovation process support

If creativity and innovation in NPDV are desirable attributes of a HEI, we might infer from the lack of strategic direction and the lack of training provided in the process in all the institutes examined, that focused, research-informed support for new programme development is required in Irish IOTs. This support might be generated along the lines of the Guelph University NPDV support model, within a

climate which considers the factors or dimensions which characterise a climate for organisational creativity and innovation, as identified in the new *three-level model for organisational creativity and innovation in HEIs,* developed in this doctoral research study. At Guelph University, Canada, Wolf (2007) developed the Curriculum Development Process Model, depicting curriculum development as an iterative process comprising three phases, including curriculum visioning; curriculum development and finally, alignment, coordination and development. He describes new programme development as a continuous improvement process that generally takes up to one year. In the University of Guelph, there are educational retreats facilitated by educational developers to assist academics in examining or re-examining programme objectives and to develop new programmes. They believe their approach works because it "provides enough instructional design expertise on a just-in-time basis for faculty to develop their own capacity to move to the next level of curriculum and course alignment in a context of complexity" (Wolf, 2007, 15–20). This structured just-in-time support would be beneficial to academics in NPDV processes.

The Guelph University innovation support process values, encourages and nurtures the creativity of academics and acknowledges the complexities involved in developing a new programme of study. Guelph University understands the need for timely support for academics throughout the NPDV process as their NPDV innovation support process assists academics to navigate the complex regulatory procedures of NPDV.

At Institute level, to encourage academic engagement in innovation processes within the institute, and within new programme development in particular, consideration should be given to the provision of training and comprehensive process guidance along the lines of the Guelph University process. Furthermore, if the development of innovative new programmes of learning is valued, then the lack of formal training in this complex process should be addressed, as should the lack of strategic direction for the process in the institutes.

6.3.6 Recommendation six: Get clarity of responsibilities in NPDV

The final issue to be addressed, is related to HE policy at state level in Ireland and refers to the difficulties generated by the lack of collective understanding of the roles of NPDV validation panellists. Difficulties were created by misunderstandings related to the roles and responsibilities of panellists at external validations of new programmes of learning. In particular, misunderstandings related to the role of the registrar on the panel, has generated confusion. Given the nature of cross-institute input into external validation, this is an important issue which should be addressed as it may have potential impact on the clarity and impartiality of validation processes. This difficulty will have to be resolved in the policy at national level in QQI.

At Irish state level the QQI should address the difficulty generated by the lack of common understanding of the roles and responsibilities, (in particular that of the internal registrar), of the external validation panel members.

6.4 Principal contributions to knowledge of this research

This in-depth study of the climate for C&I in Irish HEIs has uncovered many new perspectives relevant to the current changing climate in Irish HE, the two most significant contributions to knowledge of this study include:

i. The newly developed three-level model of organisation creativity and innovation.
ii. The in-depth analysis of the contemporary academic working environment and the climate for academic creativity and innovation in Irish IOTs via analysis of NPDV processes.

6.4.1 Contribution to knowledge: the three-level model for C&I

The newly adapted three-level model is an important contribution to knowledge in the field of organisational creativity and innovation research. Though another Irish thesis, reviewed earlier, attempted to shine a light on creative practices of Irish academics (Boulos, 2013), this thesis presents the first model to comprehensively gather together and illustrate the factors, drawn from the Irish IOT sample, which impact on academic creativity and innovation in higher educational organisations

in Ireland. This model can serve as a tool for higher educational policy makers to assess the potential impact of the introduction of new HE regulatory protocols on the creative practice of academics.

6.4.2 Implications of the development of the three-level model

This model illustrates the fact that organisational creativity and innovation is fostered by factors at multiple levels, and that there is significant systemic factor interdependence. Thus, any attempt to foster deep long-lasting organisational creativity and innovation in higher educational environments must acknowledge all the factors which have impact at each level: at individual/team level, at organisational level and at meta-organisational level. Any one-dimensional attempt to foster creativity and innovation by focusing on, for example, employability or industry related policies and economic goals will create imbalance in the system in the long term. What is required for creativity and innovation in the HEI is an attention to factors at each level on the model, and particular consideration should be afforded to the effects of human interaction on creativity and innovation, as these resurface at each level on the model: the importance of effective leadership, teamworking, managerial support and the building of trust at all levels cannot be underestimated.

6.4.3 Contribution to knowledge: in-depth analysis of NPDV and IOT climate.

Chapter 4 and 5 in this study represent the findings of a detailed interrogation of the provision for academic creativity and innovation in the curriculum development and validation process in Irish IOTs. This is the first detailed study of Irish IOTs which concentrates on NPDV, this enhanced understanding could lead to process improvement. Several of the recommendations in the previous section contain suggestions for the improvement of this process. Quality control agencies and institute staff support departments will be able to benefit from this increased understanding of the process. This understanding of NPDV within the institutes has provided significant insights into the working environment of Irish academics at a time of significant change in the sector.

6.4.4 Implication of the increased understanding of NPDV processes

It is expected that improvements would be made the IOT sector with regard to process guidance and training, based on these recommendations. It is also

expected that IOT management would pay attention to the lack of strategic direction and training in this process and reconsider the value of the process to the institute and graduate future development and invest more in curriculum development. A broader and more significant implication of this study is the insight gained into the working environment of academics in Ireland. This implication will be discussed below, in the closing section of this thesis.

6.5 Limitations of this research study

Three limitations have been identified to have impact or potential impact in this research study. The first relates to the propensity towards creative endeavour of research respondents, the second, to potential interview effect and bias and the third, to the choice of a single academic creative process: NPDV as the process employed, to identify the factors impacting on creativity and innovation within the institutes examined.

Participants self-selected for inclusion in this study on the basis that they had had prior involvement in the innovation process of NPDV in their organisations. This basis for inclusion might lead to a justifiable assumption that research respondents in this inquiry have a greater propensity towards engagement in creative and innovative initiatives than might the general population of academics. Assuming this of respondents, it is reasonable to expect a more significant emphasis in the findings, on the importance of system support for creative endeavour, than might be reflective of the general academic population. Further, if this assumption towards greater creative endeavour is true, the implication for this research study is that findings will not be reflective of the entire academic population of the institutes involved but only of those academics who are actively involved in NPDV. Furthermore, as the researcher conducting this study, it is worth noting that I began this research from this position. To mitigate against this, this tendency towards creative endeavour has now been made apparent and must be taken into consideration when reading findings. In addition, I took action where possible to address any potentially biased incidences, via CGT theoretical sampling and constant comparative and reflexive practices. For example, I had noted within one institute that participants were, comparative to others, more highly critical of the lack of innovation support systems in their institute. I acted on

this, seeking to gather further experiences in this venue, interviewing 2 additional participants in that institute employing purposive sampling. This technique, consistent with the CGT frame, did not refute views already expressed but served to further corroborate them.

In effect, this study does not pretend to represent participants' experiences as reflective of those in all Irish IOTs, but they do constitute experiences of academics interested in pursuing creative and innovative developments in their organisations in the IOT sector. Further, trustworthiness of the findings in this study, are corroborated by their consistency with the literature review and the extensive documentary analyses undertaken.

A second possible methodological limitation might result from the interviewer effect. This refers to the artificial impact of the interview on the information participants wish to provide (Harvey, 2014). In addition, interviewer bias can occur when a particular observation is influenced by some interviewer attribute (Harvey, 2014). I sought to mitigate this effect to some extent by employing a more dialogical approach in the semi-structured interviews. In addition, a full explanation of my involvement and my role in this research was explained to participants beforehand. As a result, a less power laden, conversational interviewing style ensued. The practice of reflexivity and transparency of my approach and position in this research, has assisted me in the detection and identification of biases. During the research process, though CGT permits involvement of the researcher in the co-construction of theory grounded in the data, I endeavoured to remain conscious of the impact I might have on the research process and on the interpretation of findings.

A third limitation relates to the exclusive employ of the NPDV process for examination of the factors which impact on organisational creativity and innovation in HEIs. This study concentrated primarily on academics' experiences of the NPDV process in five Irish HEIs to examine the institute provision for a creative climate. Though findings are corroborated by their strong correspondence with views from the literature, and the credibility of findings is enhanced by corroboration with Amabile's extensive creative climate research (1882, 1983, 1988, 1989, 2012, 2016), it must be noted that a limitation of the newly developed model, relates to the fact it was developed from close

examination of one academic process only and that the examination was limited to processes in four Irish IOTs, and one Irish university. However, it is important to note that an analysis of the NPDV process in a research venue, provides significant insights into management flexibility and strategic planning processes; into staff initiative, motivation and engagement and impetus towards innovative endeavour.

6.6 Recommendations for further research

In the literature review we found that, despite the proliferation of HE policy at state and at EU level promoting HE creativity and innovation, there were limited research studies undertaken to investigate the factors which have impact on creativity and innovation in HE climates. This research study set out to address this deficit and to understand, within the Irish IOT context, how to support the needs of academics in creative endeavour in HE. In addition to this gap in research, there was a further deficit in the literature, evident in relation to examinations of the new programme development process within the Irish HEI context. Only one action research paper was found, documenting a programme development support initiative in an IOT (Donnelly, 2004). No further research documenting the needs and training requirements of academics, involved in the process of bringing through a creative new programme development, has been uncovered in Ireland.

Though many research studies have been undertaken to assess, and to identify, factors which have impact on organisational creativity and innovation in commercial environments, there have been very few creative climate studies to identify similar factors in the higher education environment, despite heightened attentiveness to the promotion of creativity and innovation in European Higher Education policy. Further research to identify the characteristics of the optimum climate for creativity and innovation in HEIs is imperative, if we wish to promote these attributes in our educational systems. It is crucial that further research pays attention to factors influencing the work of academics. It would also be important to assess how a climate conducive to academic creativity and innovation is linked to undergraduate and graduate engagement in creative endeavour. It is my view that if academics feel restricted in their work environments and the academic

climate is not conducive to creativity and innovation, it is difficult to enhance graduate creativity, but this contention needs to be investigated by further study.

Further, as the model developed in this study was developed from the Irish HEI context, and applied specifically to NPDV, it is recommended that further studies into the attributes of HEI creative climates be conducted in other countries. The *three-level model for organisational creativity in higher education organisations* could then be assessed for wider applicability.

6.7 Conclusion

If *creativity is about change, transformation, and working at the edge of chaos then, in order to occur in a meaningful or sustainable way, it needs to become an intrinsic part of a larger complex adaptive system in which the people, the systems, the procedures, the processes, and the environment are, in that clichéd phrase, "fit for purpose" or, better, "fit for creative purpose" (Kleiman, 2011, 62-9).*

HEIs are large complex systems which, in order to remain relevant, must constantly adjust their processes to incorporate changing societal influences and needs. To do this, they must be flexible and creative. The three-level model developed in this study provides HE policy analysts and senior managers with a valuable tool to assist in the systematic interrogation of the provision for creativity and innovation in HEIs. Senior educational managers could use it to examine the provision for creativity and innovation in their own institutes, and policy makers at state and EU level could employ this tool, to interrogate new regulatory initiatives to ensure they provide for *creativity first,* before they are implemented in practice. If creativity is to emerge, persist, and lead to innovative expression, HEI management and change agents must take a multi-faceted approach to creativity generation, consciously promoting it at multiple levels in the system.

At a time when the IOTs in Ireland are "faced with existential challenges that go to the heart of their identity" (Thorn, 2018 191), it is essential that the institutes themselves have the capacity within themselves to evolve and effectively align themselves to meet the challenges of the changing needs of society. An analysis of the NPDV processes within the four Institutes of Technology, provides significant insights into the nature of the working environment within these

institutions. This analysis also identifies the key issues which should be addressed, in order to build more creative and flexible climates inside these institutions, enabling them to deal more effectively with change.

This thesis has illustrated, via the work-life experiences of academics, the extensive variety and range of influences within these complex HEI systems which have impact on academic creativity and innovation. The process of NPDV proved to be an effective lens to employ, to analyse the interconnected multiplicity of factors which have impact on creativity and innovation in Irish HEIs. NPDV provided a broader insight into the IOT system, as the process itself draws on a multiplicity of practices inside the institutes: from inside the office of the registrar, it draws on the processes of standards compliance and quality control; from the academic departments, it engages staff and management. Additionally, it provides insights into the willingness and motivation of staff to engage with innovation and it provides insights into the flexibility and strategic direction abilities of senior management. In short, the analysis of IOT processes in this thesis, has effectively revealed the state of creative health of the HEIs examined.

Curriculum development within the IOT environment is highly regulated and structurally restrictive, (and it is often necessarily so). The data in this study confirms that bringing innovative developments through the system can be arduous. However, it is reassuring to note, that despite the difficulties encountered by academics, innovative developments can be realised with some degree of ease in a climate which is conducive to creativity.

In a comparison across research sites, Delta impresses as having the attributes of a climate conducive to creativity. In Delta, participant experiences indicate, that this is a place where new curriculum developments are facilitated, supported and defended by management. Respondents in this institute (as well as those research participants from other research venues who had experience of validation process panels within Delta) did not experience the same level of difficulties or impediments to NPDV in Delta, as were experienced within the other IOTs examined. The key differences identified, which distinguish Delta as the best practice institute (of the four IOTs examined) with regard to a climate conducive to creativity and innovation, are related in the main, to leadership and innovation process support.

The impact of leadership is profound. Effective leadership has the most significant impact on the climate for creativity and innovation in the institutions examined, as many of the other key attributes of an effective climate for creativity and innovation (effective team work and peer group support; a culture of trust; management communication clarity and decisiveness and management expertise) are significantly influenced by the "key individuals that are at the top" (Len, HOD, Delta). Further, in two of the institutes, Delta and Beta, reference was made to the significant positive effect on the climate of professional respect and trust which was brought about by a change of institute president. Participant experiences indicate that leaders who successfully employ the tools of trust; decision making transparency; consultation; support and strategic direction provide, by extension, a climate conducive to creativity and innovation. 18 out of the 20 participants in this research referenced experiences of leadership behaviours as having significant impact on creativity and innovation in curriculum development. The emphasis, within the empirical research findings on effective leadership for creativity, is consistent with the literature. It is consistent with the findings in the Swedish university study (Ekvall and Ryhammar, 1999). It is consistent with the LTSN studies conducted in the UK (McGoldrick and Edwards, 2002; Oliver, 2002) and with Amabile's research (Amabile, 1997; Amabile and Khaire, 2008). Furthermore, in line with contemporary paradigmatic shifts outlined above, according to Kandiko (2012), there is a need for creative leadership within the university in order to confront the challenges of the knowledge economy.

Thus, it is evident that to establish a climate conducive to creativity and innovation in a HEI, it is a fundamental that an effective leader is in place, a leader who establishes a culture of trust, strategic direction for innovation, collaborative teamwork, participative safety and supportive management practices. It is important to note that trust plays a considerable part according to participants, in their motivation towards creative endeavour. A perceived lack of trust by senior managers, in programme developers' professional capabilities and specialised domain expertise, has a far-reaching demotivating impact on creative initiative. This is consistent with research which indicates that trust, openness, supervisory encouragement, freedom and participative safety play a significant role in creativity stimulation (Ekvall, 1997; Anderson and West, 1998; Amabile, 2012).

Strategic direction for curriculum development and NPDV process training have been identified by participants as important. Yet, it is of note that no formal responsibility has been allocated to the provision of strategic guidance for programme development in any of the institutes. Neither has training for NPDV been formally provided for, in any of the institutes, for either academics or managers. It is an alarming observation, that in an institute of education, the educators themselves are not provided with formal training to facilitate the development of programmes of learning to provide for future societal needs. Furthermore, the workload; regulatory controls and bureaucracy involved in programme development, are prohibitive and time consuming. These deficiencies must be addressed in order to support creativity and innovation in curriculum development. Empirical evidence gathered in this study, of bureaucratic procedures and deficiencies in training and innovation process support, reflects the claims from the literature that HE policies appear to pay lip service to the development of creativity (MacLaren, 2012), and that increasing controls in the sector, further limit academic freedom (Keeling, 2006; Mather and Seifert, 2013; Kallio *et al.*, 2015).

This thesis provides significant insights into the attributes of the working environment of academics within IOTs in Ireland. It provides guidance in relation to the characteristics of a creative climate in HE organisations, and is a valuable contribution to the academic discourse, at a time of considerable upheaval in the Irish HE sector. The qualities and characteristics of effective leadership for creativity and innovation have been identified in this thesis, and these attributes, where present, have a considerable impact on academic creativity and innovation, as evidenced in Delta institute.

The presentation of the case of Delta in the thesis, is reassuring as it shows that where there is a climate of trust, collaboration, management support and effective leadership for innovation, that the flame of creativity can be nurtured, in spite of the higher-level challenges and constraints within the meta-organisational environment, demonstrating that c**reativity can emerge within a HE climate of constraint**.

7 Appendices

Appendix 1: The dynamic componential model (Amabile & Pratt, 2016)

The dynamic componential model of organisational creativity and innovation is the 2016 revision of the componential theory (See literature review section 2.7). Five stages make up the steps in the organisational innovation process (top of Figure 7 1 below). At the bottom of the diagram, individual creativity factors are illustrated. To the bottom left of the diagram there is a rectangle which represents the social environment having impact on the organisational creativity and innovation process.

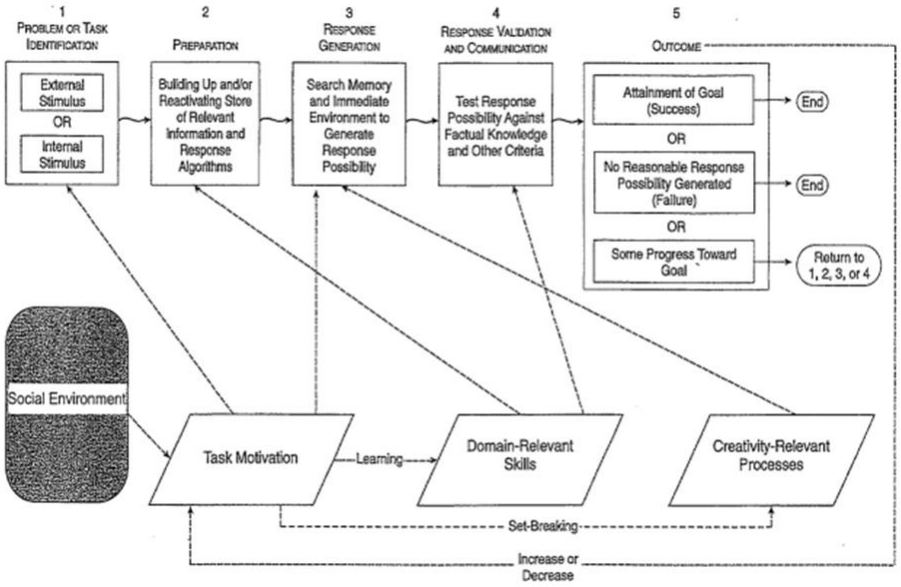


Figure 7-1 The dynamic componential model of organisational creativity and innovation (Amabile & Pratt, 2016).

Appendix 2: Information & consent form

Information and consent form for participants

Research (working) Title: Beyond the higher education creativity and innovation rhetoric: academics' experiences of new programme development and accreditation practices in Irish higher educational institutes.

The purpose of the research: This research is part of a doctoral study which aims to formally explore academics' perceptions and experiences of new programme development and accreditation processes (on the ground) within selected Irish higher educational institutes. In addition, also of interest is how these processes permit, support, benefit and /or hinder academic creativity and innovation. My doctoral examiners will be the primary readers of the final research thesis.

Research objectives

This research proposes to lend a voice to academics in practice, and uncover how ideas for new programmes come about, how new programmes are developed and accredited, on the ground. In addition, how programme development processes provide for academic creativity and innovation, is of interest.

Though research findings may not be applicable to all Higher Education (HE) environments, some findings may inform HE policy makers and may assist in the creation of an appropriate balance between mechanisms of control and system flexibility for academic creativity and innovation. At the very minimum, it is hoped that findings from this proposed research will contribute to the dialogue about the nature of the professional environment inhabited by academics in HE and the role of creativity and innovation within it.

Researcher disclosure

It is important to note that this research has not been commissioned by any organisation or agency. It is planned to present research findings primarily to University of Lincoln doctoral examiners and perhaps at academic conferences and in academic journals.

I, Janine Mc Ginn, am an employee of [redacted], and as a doctoral research student at the University of Lincoln, I am pursuing an award of Doctor of Education. I undertake to retain confidentiality of all data emergent from this research and I guarantee that I will not use any information disclosed to me by participants in this research for any purpose other than to further the research objectives stated above.

Informed consent

All research will be conducted according to the ethical guidelines set out by University of Lincoln[redacted] and the British Educational Research Association. Interview participants may ask at any time for clarification of anything they don't understand or would like explained further. Participants are not obliged to answer any of the questions that are put to them and are

free to exit the research process at any time. The researcher will ask permission to record the interview and the recording can be stopped at any time upon request.

Confidentiality

Interview recordings and typed transcripts will be used only for research purposes, and third parties will not be allowed access to them during or after the course of the research project. Any interview transcripts will be encoded so that no record of the participants' names and data exist side by side. All data will be password protected and held in a secure environment.

Anonymity

Institutes and individual participants will be made anonymous; names from interviews will not be mentioned in any publications that arise from the research. If for any reason any one of the institutes wishes to disclose or name schools involved in this research, full permission will be sought from institute management, but no participants will be named under any circumstances.

Feedback

Participants will be sent a summary report on the findings if they wish.

Consent

If you require any further information on this project prior to consenting to participation, please contact me on 086 [redacted] or by email at Janine.mcginn@[redacted]

I understand the nature and purpose of this research and I consent to being interviewed. I understand that I do not have to answer any of the questions and that I may exit the interview at any time.

I do / do not consent to the interview being recorded.

I do / do not wish to be sent a summary of the findings when the project is completed.

Signed……

Date……

Interview schedule

Interview Questions Document.

Researcher: Janine Mc Ginn, [redacted] employee, doctoral research student at University of Lincoln, U.K.

Research context: Multiple case studies of new programme development & accreditation practices in selected Irish higher educational institutes. (email: Janine.mcginn@[redacted].ie)

Research Title:

Beyond the higher education creativity and innovation rhetoric: academics' experiences of new programme development and accreditation practices in Irish higher educational institutes.

Prompts for researcher:

a) Assurances re confidentiality and anonymity (name will be stated on recording but recording erased once written transcript is assigned an encrypted pseudonym).
b) Completion of consent forms
c) Permission to record & signature
d) Approximate duration of the interview (30 minutes)
e) The aim of this interview is to gather your experiences of the new programme development / programme accreditation / validation processes within your institute. In addition, of interest in this research is your opinion in relation to how the programme development and accreditation process provides for / supports / hinders academic creativity and innovation.
f) Participant information: Name / gender / age bracket / contact information/ number of years employed within institute /Job title; principal programmes / disciplines you are associated with; other roles within institute.

Q1 Please describe your experiences of programme development and accreditation policy and practice within this institute. Can you talk me through the process from beginning to end, from the idea generation phase through to final accreditation?

a. How did idea come about?
b. How did the new programme idea stage move towards becoming a project for development, how does the NPD system begin?
c. Could you describe the initial internal process of approval from peers (formal and informal)?
d. Could you describe experiences of programme development between internal & external validation?

e. Could you describe external validation experiences?
f. How does the programme move from approval towards implementation (new programme offering)?
g. Do you have any further comments / experiences to add on the entire process?

Q2a. How would you define creativity?

Q2b. How would you define creativity in relation to your professional practice?

Q3a. How would you define innovation?

Q3b. How would you define innovation in relation to your professional practice?

Q3c. Can you explain how important (you feel) academic creativity and innovation is in the new programme development and accreditation process?

Q4. Do you feel you are living up to your individual ability to be creative / innovative in your professional practice? Explain.

Q5a. Please describe any (additional) incidents of creative and/or innovative work projects or processes you have been involved in, in your institute.

Q5b. To what extent do you believe, is the institute culture supportive of creativity and innovation, can you provide any specific examples? If it is supportive, why is it / why is it not?

Q6. How do you believe accreditation policy and practice impacts on academic creativity and innovation?

Q7. Can you suggest any improvements to programme development & accreditation policy and practices?

Thank you for your participation.

Appendix 3: Ethical Approval Form

Ethical Approval Form (EA2)

EA2

Ethical Approval Form:

Human Research Projects

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This form must be completed for each piece of research activity conducted by academics, graduate students and undergraduates. The completed form must be approved by the CERD Research Ethics Committee. **Please complete all sections**. If a section is not applicable, write N/A.

1 Name of researcher	Janine Mc Ginn
	Department/School CERD Graduate School (D.Ed.)
2 Position in the University	Doctoral Student (Supervisor is Dr Julian Beckton)
3 Role in relation to this research	Primary Researcher
4 Brief statement of your main research question	Academics' perceptions of the climate for creativity and innovation within Irish higher-level institutes of technology. The purpose of this study is to uncover: 1. Dimensions of a climate which promotes creativity and innovation among staff in third level institutes of technology in Ireland. 2. To study climate dimensions, the objective is to gather experiences of academics of a creative process in their institutions: The New Programme Development and Validation Process (NPDV). 3. To examine the impact of the NPDV process and related quality procedures and control structures on the work climate for creativity and innovation in the higher-level institutes under research.

5 Brief description of the project	Context This study will be conducted in schools of three higher level educational institutes in Ireland: I am a lecturer and employee of one of them and part of this research will therefore be conducted within my place of work. Participants Up to 20 academics; heads of school and heads of department employed for a minimum of five years within the schools will be included. Aim To explore the dimensions which hinder and promote a climate for creativity and innovation within institutes of technology in Ireland via the lens of the NPDV processes in the institutes. Objectives 1. To develop an informative grounded framework from the experiences of academics interviewed, suggesting the optimum dimensions of a climate which promotes academic creativity and innovation in Irish Institutes of Technology. 2. To detail climate (for creativity and innovation) variations within the schools studied. Proposed methodology This is a multisite case study. Qualitative interviews will form the basis of primary data collection for this study. In case study research, many other sources of data are typically examined, however in this research, further documentation examined will be to corroborate interview data. The qualitative constructive interpretive paradigm will frame this research. I will record, on location, semi-structured interviews with volunteers from within each institute under investigation. Documentation referred to by participants within the interviewing process will also be referenced if required. Kathy Charmaz' constructivist grounded theory will provide a systematic bridge between data collection, analysis and theory generation for this study. A personal reflection of the interview will be recorded as soon as possible after each interview. Interviews will be recorded subject to participant consent and transcripts will be made of the interviews. Each participant will be given a

	pseudonym so that data transcribed will be anonymous. NVivo will be employed to assist with data coding and analysis.	
	Approximate start date: May 2014	Anticipated end date: May 2015
6 Name and contact details of the Principal Investigator (if not you) or supervisor (if a student)	Janine Mc Ginn	
	Email address: Janine.mcginn@[redacted]	Telephone: 00 [redacted]
7 Names of other researchers or student investigators involved	Not Applicable – sole researcher for doctoral study	

8 Location(s) at which this project is to be carried out	Locations: Data will be collected via personal site visits 1. Institute X 2. Institute Y 3. Institute Z Access to locations: The Registrar of (my employer) [redacted] has discussed the aims and objectives and methodology of this research with me and agreed to recommend this study to the registrars of the two institutes and call for volunteers within all 3 institutes to participate, once ethical approval is in place with UL and validated [redacted] Interview setting: reserved neutral meeting rooms or offices as agreed with participant. Face to face individual interviews, 30 minutes' duration. Interview population: The population will comprise academics employed a minimum of 5 years' duration (this duration is selected to ensure participants have had complete experience of examination procedures and periodic quality procedures and controls) within the business schools. Lecturers; Heads of Department and Heads of School will be interviewed. A call for volunteers will be made via the registrars of the institutes; approximately 20 volunteers will be interviewed. Individuals with most years' experience and/or experience in creativity and innovation will be selected from volunteers, rationale will be provided for choices made.
9 Statement of the ethical issues involved and how they are to be addressed, including discussion of the potential risks of harm to both project participants and researchers	Ethical dilemmas which may arise 1. Insider research: I will be researching within my institution; this may cause discomfort both for participants and the researcher. 2. Reporting of issues which may cast an unfavourable light on one or more of the institutes under study, attention here is afforded to the fact that [redacted] is my employer; research sponsor and an institute under research. 3. Participant vulnerability and discomfort: Although there are to be no underage participants interviewed,

This should include: • an assessment of the vulnerability of the participants and researchers • the manner and extent to which the research might not honour principles of respect, beneficence and justice • concerns relating to the relationships of power between the researcher(s) and those participating in or affected by the research	interviewees may feel uncomfortable discussing aspects of their employment environment with me. 4. Data confidentiality and data protection issues. Ethical principles to guide research: Regarding ethical considerations for my research I undertake to adhere to The University of Lincoln's ethical guidelines for research and the British Educational Research Association's Ethical Guidelines for Educational Research. The BERA guidelines are also commonly employed in Irish doctoral research. All the higher-level institutes under study have ethical policies which have also been consulted and are compatible with BERA principles. These principles have been considered and will guide my research. In addition, I will continue to consult on ethical issues with my supervisor, Dr Julian Beckton, throughout the research process. Addressing the ethical dilemmas 1. As an insider researcher, I need to reassure participants that data gathered will be used for the purposes of the research objectives only. I will reassure participants that their contribution will be anonymous, and that interpretation of the data collected will endeavour to be faithful to participant contributions. Participants, (or indeed the researcher) will retain the right to end or withdraw from the interview process at any point before the completion of data analysis. Informed consent will include reference to these stipulations. 2. The BERA principles require me to bring my ethical considerations to the attention of my research sponsor, [redacted] who is also my employer and one of the institutions I will be involving in my research. There were no stipulations attached to the research agreement with my research sponsor. An application for funding was made and approved without conditions. I had been concerned that my employer might assert ownership of / censor my findings or publications. In this regard, I have consulted with the registrar [redacted]. The registrar, who also leads the research group within [redacted], has allayed these concerns and given this study his full support and offered to promote it to the registrars of the two other institutions. About the reporting of issues which may cast an unfavourable light: I have also discussed this issue with the registrar of [redacted], and he does not foresee any difficulties with this issue, given the close working relationship now established across these three institutes. To mitigate against these issues, I will allocate a pseudonym to each institute. In addition, as there are 14

	Institutes of Technology in Ireland, the geographical location of the institutes under study will not be identified, thus not be readily identifiable nationally. 3. All participants will participate on the basis of voluntary informed consent. I will provide all participants with a consent form which will detail the research objectives and how and to whom and where data will be reported Participants will have the right to withdraw and they will be informed of this right at the outset, on the consent form, before research is undertaken. Participants will be given a guarantee of privacy, confidentiality and anonymity. I will allocate a pseudonym to each participant interviewed and no one else will be able to identify participants except me. The consent form will make it clear that interviews will be recorded digitally (and that participants may refuse to be recorded). Consent for recording interviews will be obtained; an explanation will be given as to why the interview is being recorded and a guarantee will be provided that the digital recording will be erased following final modification of the doctoral thesis. Storage of the recordings will be securely password protected and participants will be informed of this. Participants will be informed that recording can be stopped at any time during the interview and that comments can be made 'off the record' and not used, upon request. Participants will also be invited to validate the transcript of their interview. 4. I will comply with the U.K. Data protection act and the Irish Data protection act regarding the safeguarding of data. Data will be stored on my personal laptop and personal hard drive backup and will be firewalled, and password protected. I will undertake to employ measures to ensure confidentiality and anonymity of participants and institutes. Further comments on ethics I have no position of authority over any other employee within the institution, so I do not envisage any power conflict. No underage participants will participate in this research and I foresee no sensitive cultural issues arising during this research. Any documentation consulted and employed as reference material to support data obtained during interviews will be anonymised and securely held.
10 Does this research involve children	Yes ☐ No ☒
	If yes, please explain (a) how you have obtained or will obtain the appropriate permissions to work with these people (E.g.,

and/or young people?	DBS check in the UK), and (b) your principles for their ethical engagement. Not applicable

Ethical approval from other bodies

11 Does this research require approval from an external body?	Yes ☒ No ☐ If yes, please state which body: My place of work [redacted] and the two other institutes involved in this study [redacted] and [redacted].
12 Has ethical approval already been obtained from that body? Please note that such approvals must be obtained before the project begins.	Yes ☐ (Please append documentary evidence to this form.) No ☒ (If no, please explain why below.) Ethical approval has been obtained from my place of employment [redacted] and the two other institutes under study. All institute registrars have been provided with study ethical considerations. Ethics procedures within these institutes of technology acknowledge ethics processes within other institutions. Clause 6.1 of [redacted] research ethics document acknowledges processes within other institutions: An assessment of Ethics in Research Form should be submitted to the sponsoring Head of School, along with a completed Ethical Approval from Other Committees Form; a letter of approval from the collaborating establishment and a copy of their official [redacted]* outcome, where available. The Head of School will consult with the Chairperson of the [redacted]. Where they are satisfied that the appropriate procedures have been followed for the external ethics review then approval will be granted without the proposal going before the Institute [redacted]. Where they are not satisfied then the proposal will be Sent for full review to the [redacted]. Extract is taken from [redacted] Research Ethics Policy. [redacted] and was retrieved on March 11, 2014, from https://www.[redacted] (*[redacted])

Providing I am granted ethical approval from the University of Lincoln ethical committee, I can obtain [redacted] ethical approval without undue delay as per instructions above.

As detailed above, the registrar of [redacted] who is also chair of [redacted] Ethics Committee, Mr [redacted], understands the parameters and objectives of this research and supports this research project. Once ethical approval is in place from UL and validated by [redacted], the registrar has said he will promote these research objectives to the registrars of the other institutes.

Ethical procedures from the other institutes have been examined and are compatible with these procedures.

I will not proceed with research in a location until ethical approval has been confirmed by the relevant authority in that location, via the ethics committee or institute registrar of that organisation.

APPLICANT SIGNATURE

I hereby request that the CERD Research Ethics Committee review this application for the research as described above and reply with a decision about its approval on ethical grounds.

I certify that I have read the University's Ethical Principles for Conducting Research with Humans and Other Animals (which can be found online here: http://visit.lincoln.ac.uk/C11/C8/ResearchEthicsPolicy/Document%20Library/Research%20Ethics%20Policy.pdf).

Janine Mc Ginn
17/05/14

Applicant signature Date

Janine Mc Ginn

Print name

FOR STUDENT APPLICATIONS ONLY

Academic Support for Ethics

Academic support must be sought from your mentor prior to submitting this form to the CERD Research Ethics Committee.

Undergraduate and Postgraduate Taught applicants should obtain approval from their tutor or an academic member of staff nominated by the Department.

Postgraduate Research applicants should obtain approval from their Director of Studies.

I (the undersigned) support this application for ethical approval.

19-May-14

Academic / Director of Studies signature Date

Julian Beckton

Print name

For completion by the Chair of the CERD Research Ethics Committee

Please select ONE of A, B, C or D below.

☒ A. The CERD Research Committee gives ethical approval to this research.

☐ B. The CERD Research Committee gives *conditional* ethical approval to this research.

12 Please state the condition (including the date by which the condition must be satisfied, if applicable).	

☐ C. The CERD Research Committee cannot give ethical approval to this research but refers the application to the College of Social Sciences Research Ethics Committee for higher level consideration.

13 Please state the reason.	

☐ D. The CERD Research Committee cannot give ethical approval to this research and recommends that the research should *not* proceed.

14 Please state the reason.	

Signature of Chair of CERD Research Committee (or nominee)

20th June 2014

Signed

Appendix 4: Data Analytical Hierarchy (Analysis overview)

Table 1 – Analytical Process Overview – Data Analytical Hierarchy guided by Charmaz (Charmaz 2014)

Analytical Process	Practical Application	Strategic Objective	Iterative process throughout analysis
Data Collection	Interviewing and documentary analysis. Transcribing primary data and formatting demographic and other profiling information for import into the selected computer aided qualitative data analysis system (NVivo)	Data Management *(Open and hierarchal coding through NVIVO)*	Assigning data to refined concepts to portray meaning
Initial Coding (context setting)	Phase 1 – Initial Open Coding – yielded contextual and descriptive data (phase 1 limited to context setting and descriptions) NVivo was employed, coding from original documents	Descriptive Accounts *(Coding on and annotating through NVIVO and manually)*	Refining and distilling more abstract concepts
Initial Coding / Open Coding for experiences, feeling, attitudes	Phase 2 – Second iteration of open coding. Manual coding & Nvivo coding from original documents		Assigning data to themes/concepts to portray meaning
Open Coding	Phase 3 – Open coding yielded 42 initial codes and 145 open sub-codes		
Axial Coding Developing Core Categories	Phase 4 – Categorisation of Codes Data Reduction/Consolidation, yielded 4 core categories & 29 subcategories	Explanatory Accounts *(Extracting & theorising deeper meaning, drafting summary statements and analytical memos through NVIVO)*	Assigning meaning
Final Focused Coding	Phase 5 – Data reduction / Consolidation Yielded 4 themes and 12 sub-themes.		
Analytical Memos and generation of concepts and theory	Phase 6 – Writing & validating Analytical Memos Phase 6 – Validating Analytical Memos Phase 7 – Synthesizing Analytical Memos		Generating themes and concepts and theoretical meanings

Appendix 5: Codebooks from NVivo database

Codebooks\\Phase 2 to Phase 5
Codebook[22]\\Phase 2 – Focus on concerns, action & attitudes

Phase 2 – Open coding for meaning, feelings, actions (applying gerunds) – 41 broad areas identified in phase 2	**Code Definitions for Coding Consistency**	**Interviews Coded**	**References**
Change		8	17
Creative potential (living up to)	Contains answers to question: are you living up to creative potential	11	22
Improving living up to creative potential	Methods of living up to creative potential.	1	2
Obstacles to creative potential	Contains generic obstacles to creative potential	7	16
Obstruction by key colleagues	Refers to obstruction by individuals within the business school team	3	4
Perverse incentives	Refers to incentives to not be creative; maintain the status quo, not upset the apple cart.	1	3
programme development process delay	Includes reference to delay within the programme development process	4	8
public service mind-set	Refers to a negative perception of the public service, in that rigid mental models persist and resistance to change occurs	4	5
Silence	Refers to lack of answers and lack of response from permission givers	1	1
Defining creativity	Contains general references to perceptions and definitions of creativity	16	19
Applying creativity to your work		10	18
Defining Innovation	Contains references to perceptions and definitions of innovation	17	28
Applying innovation in work	Examples of applied innovation in work practices provided by academics	6	16
examples of creative projects	Includes reference to examples of creative projects / creativity in the business school	8	14
lack of creative projects	References to lack of creative projects	1	1
Hindering creative potential		5	7

[22] Codebook – Phase 2 following the first phase which resulted in descriptive context setting. This second phase went back to original documents and involved deconstructing the data from its original chronology line by line, into an initial set of non-hierarchical codes.

Importance of C&I academic perceptions	Refers to perceptions about the importance of creativity and innovation in the institute	5	6
High level of importance of C&I Climate	Perceptions which attribute a high degree of importance to C&I Climate	3	4
Need for constant adaption		1	3
Improving climate for C&I Culture	Suggestions to improve the climate for creativity and Innovation	9	25
Demolishing brick walls (demotivators)	Refers to the demotivation experienced by constant opposition to new projects	4	5
Developing sand pits	Providing an environment where sandcastles can be built, destroyed and rebuilt again and again	1	2
empowering	Refers to giving power to individuals or groups within the business school	3	3
NPD-between internal & external validations		7	16
NPD-developing the idea		15	64
NPD-external validation		15	68
NPD-failure		5	9
NPD-generating ideas & process initiation		13	47
NPD-internal peer approval		16	66
NPD-Macro constraints		10	27
NPD-programme implementation		2	2
NPD-recommendations		14	63
NPD-supports & process & timeline		19	105
Strategic direction	Proactive strategic direction provided to academics. Market scanning etc.	7	23
Structures and systems	Refers to structures and systems'‘ impact on climate for creativity and innovation	4	9
Bologna process impact	Refers to impact of Bologna on climate for creativity and innovation	1	1
QR12 Quality systems	Refers to impact of quality systems on climate for creativity and innovation	1	1
Examinations control procedures		2	4
Technology control systems		3	5
Supporting academic creativity & innovation process	Refers to how academic creativity and innovation is supported by the institute.	6	8

Lack of innovation process support		6	11

Codebook\\Phase 3 – Categorisation of codes

Phase 3 – 42 initial codes broken down into 145 open codes	Interviews Coded	Units of Meaning Coded
Actively involving industry biggest challenge in process	2	2
Aligning Learning outcomes with real understanding and meaning	1	2
Asking for help	5	5
Assessing internal capacity & skill set	1	1
Athlone	1	2
Avoiding falling into a rut	2	2
Balancing needs of industry with needs of graduate	7	14
Being passionate	4	4
being policed	2	2
Being pushed into a box by government	2	3
Being the only female on executive board	1	1
Being wary of academic snobbery	1	2
Breaking with tradition	2	2
breaking with tradition (2)	1	1
don’t know how to handle this because I’ve never seen this before	1	1
Bureaucratic structure	7	25
Cannibalising	8	11
Chair setting tone for how external validation proceeds	3	6
cobbling something together	1	1
Competitive practices	7	12
Compiling documentation	4	9
considering the proposals that come through as opposed to looking out at other things.	1	1
Constructive external validation	7	12
Convincing executive board	3	6
Convincing industry panellists	1	1
Creativity discipline specific	1	2
Creativity generating market momentum	1	2
credentials of the people who want to be offered	3	5
Developing outside of my comfort zone	1	1
cutting back	13	30
Dangerous designing a degree that has two stools	1	1
DCU	1	1
Defending innovative development strenuously	1	2
Developing alone	2	2
Developing new multidisciplinary programmes	1	3
Difficulty initiating development	3	4
Disciplinary related attitudes to change	2	5
Driving from bottom up for success	7	15
Dyed in the wool	8	17
Ego positioning with peers	2	2
exhibiting superior process knowledge	1	7
Exhibiting transformative leadership	1	2
Expecting approval at external panel	4	4
External validation experiences	11	34
External Validation focusing on content	2	5

External validation lacking rigour of internal	6	13
Extrinsic motivators for developing	7	12
Fear based peer objections	2	4
Fearing future IOT developments	1	1
Feeling appreciated for putting in the effort	3	5
Feeling blocked from evolving the proposal	2	6
Feeling excluded from process	3	10
Feeling exposed	2	5
Being wide open and honest	1	1
Feeling frustration with internal validation sequencing	1	1
Feeling linked to industry	1	1
Figuring out systems	1	1
Filleting peers integral to quality validation	9	17
finding it hard to engage the students	1	1
Focusing internally	2	2
Following not leading	1	1
forced to overly define	2	2
Frustrating lackadaisical attitude to academic rigour	2	7
Generating student creativity	2	2
get his feet under the table	1	1
goal posts were moving	4	8
Governance and Control at macro level (national level)	3	3
had free rein	2	2
Having a longer-term focus	1	1
Having an international profile	1	1
having responsibility for product development.	4	14
influencing composition of panel	7	17
Informal process of validation	6	8
innovation term is hackneyed	1	1
Inter panel briefing	2	2
Interdisciplinary constraints	1	3
Internal validation process	8	22
judging climate innovation enabling	15	31
Judging role of registrar and academic affairs office	5	20
Juggling work pressures	6	6
just because it’s new doesn’t mean it’s any good.	2	11
Kings Inns	2	3
Knowing how to package ideas	4	4
lacking administrative support	6	7
Lack of proactive strategic environment scanning	2	3
Lacking managerial support	2	10
lacking process experience	5	7
Limiting Programme Board involvement	2	5
Line management establishing innovation culture	3	6
Making things happen	2	2
Motivating oneself to innovate	4	9
multidisciplinary issues	2	2
Needing time for creativity	4	10
Needing to defend right to create	1	1
Needing training	5	15
no delay if you can get your act together	1	2
No route after failure	5	5
NPD idea Generation	5	7
NUIG	1	2

Offering new courses on CAO	1	1
One size does not fit all.	1	1
Optimistic about resources following	1	2
Passing through three committees	2	4
people who are all talk	1	1
Perceiving purpose of internal validation	1	9
Perceptions of module manager	3	4
Perceptions of roles in process	7	11
players playing with the process	5	8
Policy perceptions	4	5
Postal external validation	3	5
Practicing management roles & responsibility	10	23
President establishing innovation culture	4	12
Professional associations restraining creativity	4	5
Programmatic review	5	6
Programmes becoming dated (2)	2	3
Proposal formatting	1	1
Proposers don't know what they're doing	5	7
Researching market demand strategically	6	7
Revamping and diversifying	2	2
Screaming and kicking open doors to get onto CAO	6	8
sculpt to the talents of the people who are trying to make things happen	2	2
Seeing innovation as risky practice	2	4
Seeing the big picture - philosophy of programme	7	13
Seeking challenge	1	1
Starting from scratch	4	8
Stealing ideas	1	1
stopped earlier in the internal system	2	4
Taking the risk	4	5
Teamworking	8	16
think too much about the system and not about the implication of the system on the people	3	3
ticking boxes industry consultation	7	8
Tralee	1	1
Trust	10	21
trying to understand those constraints that you operate under,	0	0
under the radar	3	4
Understanding teaching and learning practices	3	5
Understanding the process	12	28
Upholding college principles	3	11
using the people that you have	2	3
Valuing creativity as fundamental	1	1
Valuing peers	1	1
we are limited by our own blinkers	2	2
Working within a comfort zone (radical innovation issues)	4	8
Workload inequity	6	11
wouldn't see eye to eye	1	1

Codebook[23]\\Phase 4 - Axial Coding (developing core categories)

Phase 4 – Axial Coding resulted in 4 core categories and 29 sub-categories identified and coded	**Interviews Coded**	**Units of Meaning Coded**
Complexity of stakeholders'" requirements of programme	18	284
Bureaucratic structure	9	41
Figuring out systems	1	1
forced to overly define	3	3
One size does not fit all.	1	1
Upholding college principles	3	11
Competitive practices	8	23
Programmes becoming dated (2)	2	3
Researching market demand strategically	6	7
Stealing ideas	1	1
Convincing internal mgmt. (local controls)	3	6
Discipline specific issues	4	7
Creativity discipline specific	1	2
Interdisciplinary constraints	1	3
multidisciplinary issues	2	2
Developing new multidisciplinary programmes	1	3
Dangerous designing a degree that has two stools	1	1
Governance and Control at macro level (national level)	14	41
Being pushed into a box by government	2	4
Needing to defend right to create	1	1
CAO	0	0
Offering new courses on CAO	1	1
cutting back	13	30
Cannibalising staff (zero resources)	6	8
Fearing future IOT developments	1	1
Having an international profile	1	1
Optimistic about resources following	1	2
Industry	11	19
Actively involving industry biggest challenge in process	2	2
Balancing needs of industry with needs of graduate	5	9
Convincing industry panellists	1	1
Feeling linked to industry	1	1
ticking boxes industry consultation	6	7
Professional associations restraining creativity	3	4
Programmatic review	5	6
Programme development process (Academic protocol & rigour)	18	118
cobbling something together	1	1
Frustrating lackadaisical attitude to academic rigour	2	7
Compiling documentation	4	9
External validation experiences	11	34
Constructive external validation	8	13

[23] Codebook – Phase 4 – Axial Coding comprised developing core categories to reconstruct data into a framework that represented academics experiences of creativity and innovation in their institutes through the lens of NPDV.

Expectations of approval at external validation - confidence	4	4
External Validation focusing on content	2	5
External validation lacking rigour of internal	6	13
Postal external validation	3	5
Identifying skills requirements	0	0
Aligning Learning outcomes with real understanding and meaning	1	2
Asking for help	5	6
Difficulty initiating development	3	4
lacing administrative support	6	7
lacking process experience	4	7
Needing training	6	16
Understanding the process	12	28
Internal validation process	8	22
Feeling frustration with internal validation sequencing	1	1
Informal process of validation	6	8
Passing through three committees	2	4
Perceiving purpose of internal validation	1	9
stopped earlier in the internal system	2	4
NPD idea Generation	10	17
Perceptions of module manager	3	4
Policy perceptions	4	5
Screaming and kicking open doors to get onto CAO	6	8
Seeing the big picture - philosophy of programme	7	13
Proposal formatting	1	1
Staff	9	15
Assessing internal capacity & skill set	2	2
Cannibalising	4	6
Revamping and diversifying	2	2
using the people that you have	2	4
wouldn’t see eye to eye	1	1
student	4	4
Cannibalising students	3	3
finding it hard to engage the students	1	1
Informing about other HE venues	4	9
Athlone	1	2
DCU	1	1
Kings Inns	2	3
NUIG	1	2
Tralee	1	1
judging climate innovation enabling	19	123
Motivating oneself to innovate	5	10
Seeking challenge	1	1
Needing time for creativity	8	20
Juggling work pressures	6	6
Seeing innovation as risky practice	11	34
No route after failure	3	3
Taking the risk	4	5
Working within a comfort zone (radical innovation issues)	4	8
Teamworking	10	18
think too much about the system and not about the implication of the system on the people	3	3
Valuing creativity as fundamental	4	6

Creativity generating market momentum	1	2
Generating student creativity	1	1
Perceiving professional role of self & others	19	342
Attitudes to change	4	9
Difficulty breaking with tradition	1	1
breaking with tradition (2)	1	1
don't know how to handle this because I've never seen this before	1	1
Dyed in the wool	8	17
Disciplinary related attitudes to change	2	5
we are limited by our own blinkers	2	2
Willingness to change	0	0
Avoiding falling into a rut	2	2
Defending innovative development strenuously	1	2
Being passionate	4	4
Being wary of academic snobbery	1	2
credentials of the people who want to be offered	10	23
Developing outside of my comfort zone	1	1
no delay if you can get your act together	1	2
Proposers don't know what they're doing	6	15
lacking process experience	5	7
Ego positioning with peers	12	27
Filleting peers integral to quality validation	9	17
Leadership perceptions	19	254
Being the only female on executive board	1	1
Chair setting tone for how external validation proceeds	3	6
considering the proposals that come through as opposed to looking out at other things.	1	1
Driving from bottom up for success	7	15
exhibiting superior process knowledge	2	8
Exhibiting transformative leadership	3	5
Fear based peer objections	2	4
Feeling appreciated for putting in the effort	4	6
Feeling blocked from evolving the proposal	6	15
Feeling excluded from process	4	11
Feeling exposed	3	6
Being wide open and honest	1	1
having responsibility for product development.	4	14
influencing composition of panel	7	17
Inter panel briefing	2	2
Judging role of registrar and academic affairs office	6	21
Knowing how to package ideas	4	4
Lack of proactive strategic environment scanning	8	10
Lacking managerial support	3	11
Limiting Programme Board involvement	2	5
Line management establishing innovation culture	3	6
Practicing management roles & responsibility	12	28
President establishing innovation culture	4	12
Revamping and diversifying	4	5
sculpt to the talents of the people who are trying to make things happen	4	4
Trust & empowerment endorsed by leaders	13	29
being policed	2	2
had free rein	3	3

Workload inequity	6	11

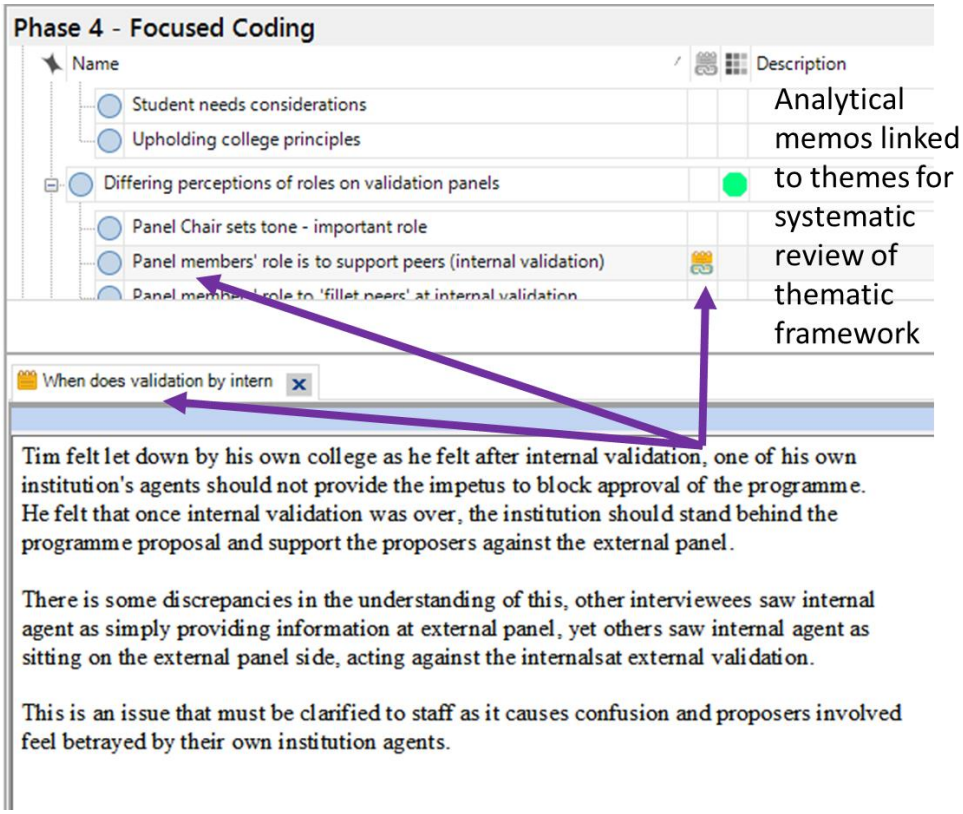
Appendix 6: Final data consolidation (phase 5 codes)

Codebook\\Phase 5 Final Focused Coding24 – Data Reduction/Consolidation

Phase 5 – Final Focused Coding - Data Consolidation 4 themes and 12 sub-themes emerging from the data	Interviews Coded	Units of Meaning Coded
Individual and Team level creativity factors	11	47
Team demotivators (brick walls, consultation & workload inequity)	3	3
Emphasising importance of teamwork	6	9
Factors affecting individual creativity	10	35
Macro-environmental forces	18	80
Governance and Control at macro (national) level	14	42
Industry demands and consultation challenges	14	25
Reviewing market, programme & student demand	7	13
NPDV process complexity & role confusion	20	372
Complexity of stakeholders' requirements of NPDV	18	157
Differing perceptions of roles on validation panels	8	45
Experiencing NPDV in practice	20	170
Organisational level - The impact of Leadership	21	291
Leadership - experiences of defective	18	123
Leadership - experiences of effective	14	105
Supporting allocating resources to NPDV	19	63

[24] Codebook – Phase 5 – Focused Coding – Data Reduction/Consolidation - involved conceptually mapping and collapsing core categories into a broader thematic framework.

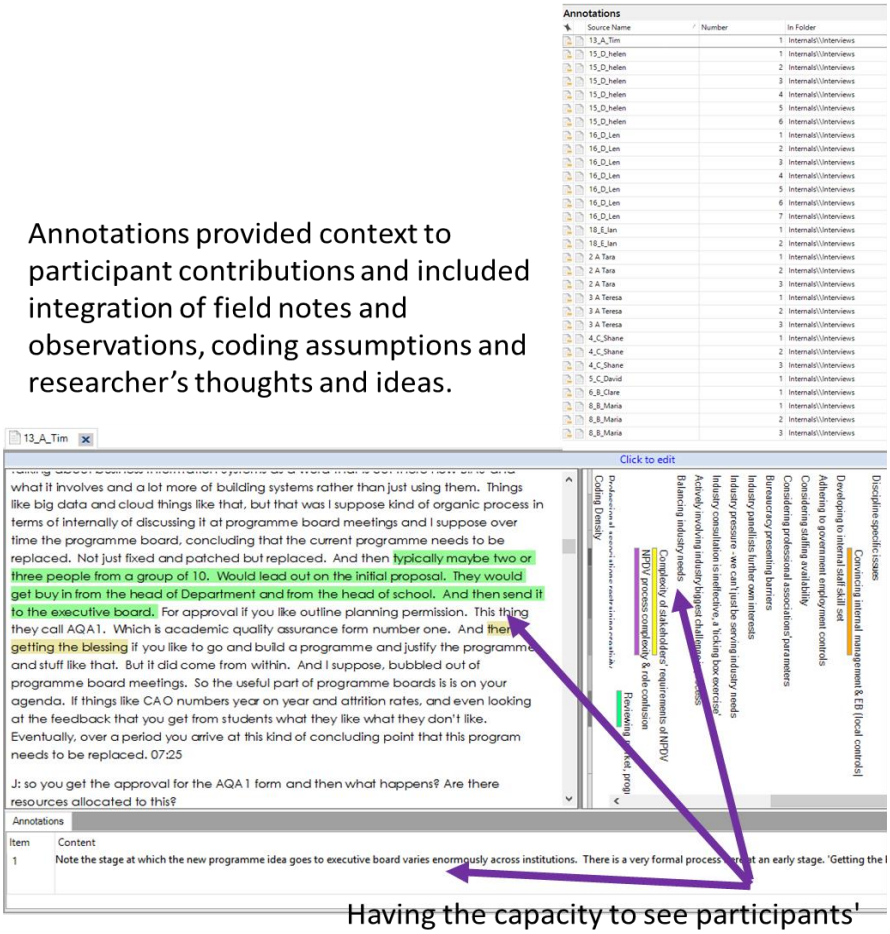
Appendix 7: Sample of an analytical memo[25]



[25] Appendix 7: Analytical memos were used to conduct a systematic review of the thematic framework developed in phase 4, axial coding. These memos facilitated a synthesis of coded content as well as researcher input to contextualise codes within the thematic framework.

Appendix 8: Example of annotations[26]

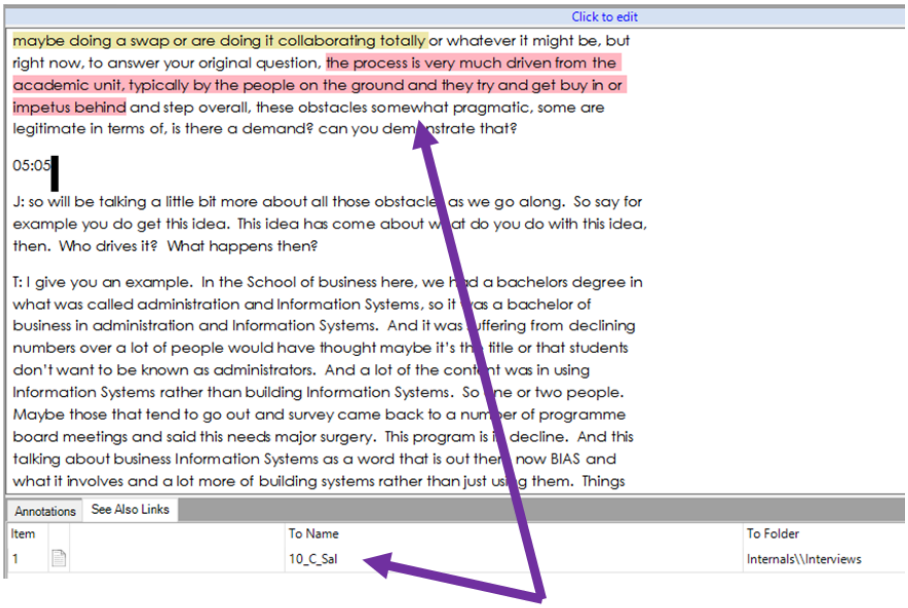
Annotations provided context to participant contributions and included integration of field notes and observations, coding assumptions and researcher's thoughts and ideas.



Having the capacity to see participants' words linked to researcher-led inputs and current coding in one place (including overlapping codes which may lead to overlapping concepts) allowed for a more holistic view of the data.

[26] Appendix 8 – Annotations captured and integrated soft data such as field notes, observations, coding assumptions and researcher thoughts and ideas for easy retrieval during analysis and write up.

Appendix 9: Example of “see also” link[27]



See Also Links allowed the researcher to make connections between recurring concepts emerging in one interview with other interviews and with concepts arising in the prime data and extant literature

[27] Appendix 9 – See Also Links allowed the researcher to make connections between recurring concepts emerging in one interview with other interviews and with concepts arising in the extant literature.

Appendix 10: Documentation to be prepared for NPDV

Documentation to be prepared for NPDV.

This is an extract from Quality Assurance Policy of one of the research venues, published in 2016 regulating the NPDV process. This extract outlines the criteria for a newly developed programme which must be documented in order for an external validation to take place

i. To examine the programme(s) against the criteria for the Institute's Policy and

Procedures for the Design, Development, Validation and Withdrawal of all

Programmes at Award Levels 6-10 in the NFQ 2016.

ii. To examine the programme(s) against the requirements of the Qualifications and

Quality Assurance (Education and Training) Act 2012.

iii. To examine the programmes so that they fit with the Institute's Strategic Plan.

iv. To examine the programme(s) against the QQI Awards Standards.

v. To examine the proposed programme title(s) and ensure that they are fit for purpose

vi. To examine the rationale and requirements for the programme(s)

vii. To examine the access, transfer and progression arrangements

viii. To examine curriculum content so that it is well structured and fit for purpose

ix. To examine the ethical perspectives of the programme(s)

x. To examine the assessment strategies and to ensure that they are sound

xi. To examine the teaching and learning strategies to ensure that they are sound

xii. To examine the teacher-learner dialogue process and to ensure that learners will be

well informed, guided and cared for

xiii. To ensure the programme is well managed and resourced.

Source deliberately withheld to maintain anonymity. Procedure was approved by the relevant IOT Academic Council and published October 2017.

Appendix 11: Organisational level codes from NVivo database

Name	Sources	References
Organisational level	21	663
Supporting allocating resources to NPDV	19	63
Strategic direction required	8	9
Recognising phenomenal NPDV workload	5	11
No hours for NPDV	12	17
Needing training	4	8
Needing support for work in developing	5	7
I understand the process	4	5
NPDV process complexity & role confusion	20	372
Experiencing NPDV in practice	20	170
Seeing the big picture is important - philosophy of programme	6	9
NPDV policies good but implementation weak	3	4
demonstrating understanding NPDV process	8	17
'ticking open doors' to get listed on CAO	5	7
Early decision making prevents wasted time developing	2	3
Constructive external validation	9	14
Compiling onerous documentation	4	9
Cobbling something together if time limited	3	8
Differing perceptions of roles on validation panels	8	45
Registrar's role is on other side in ex validation	1	1
Registrar to steady the ship - conservative powerful role	1	3
Registrar must be neutral in ex validation	1	1
Registrar doesn't fully understand his role	1	4
Registrar's role is to support us	1	1
Panel members' role to 'fillet peers' at internal validation.	1	2
Panel members' role is to support peers (internal validation)	1	9
Panel Chair sets tone - important role	3	3
Complexity of stakeholders' requirements of NPDV	18	157
Upholding college principles	3	4
Student needs considerations	4	7
Concern not to cannibalise students from other programmes	3	3
Programmatic review outcomes considerations	5	5
Complying with quality agency control (QQI & Bologna)	2	2
Discipline specific issues	4	7
Convincing internal management & EB (local controls)	3	5
Adhering to government employment controls	7	14
Considering professional associations' parameters	3	4
Bureaucracy presenting barriers	9	26
Actively involving industry biggest challenge in process	2	3
Leadership - experiences of effective	14	105

Staff feeling trusted	6	11
Showing appreciation for staff & motivating staff	4	4
Respecting staff professionalism	9	18
Experiences of effective leadership behaviours in practice	11	72
President establishing a culture of innovation	2	3
Practicing effective management & assuming responsibility	7	36
Leaders exhibiting superior process knowledge	3	18
Leadership - experiences of defective	18	123
Staff fighting for support for innovation	10	34
Going into battle	4	9
Staff feeling fear & resistance	3	9
Feeling exposed	2	5
Staff feeling excluded from process	5	15
Staff feeling controlled & lack of trust	9	26
Leaders not respecting professionalism of staff	9	18
Experiencing lack of leaders' strategic vision and tactics	7	19

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